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# THE APPROACHES TO TRUTH.



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# PREFACE.

The present essay represents a sustained effort of reflection on the Problem of Fact. Within the present compass, however, it has not been possible to give more than a rough outline of the Theory of Fact. The deeper foundations have not been sufficiently laid bare and examined, and many of the essential bearings have not been fully and clearly indicated and discussed. I have aimed at giving merely a rude framework of a System and this, I venture to hope, can be gathered in the following pages. In developing this System I have relied almost exclusively on intuitive reflection, and I have constantly appealed to my reader to experiment for himself to see if the deliverances of his own reflection should tally with those of mine. The reader therefore should be prepared for this demand on himself.

I need offer no preliminary remarks as to how this Theory of Fact has started and gradually assumed definite features. I have consciously set no models before myself in working out this System : I have rather attempted to face my problem with a mind as open and a mood as natural as that of a man who first meditates on the problem of existence : I have generally suffered no thinker to stand between myself and my object of thought. My method of treatment is constructive rather than

; to great thinkers and sys-
part illustrative. The last
have been brought are,
identical, as will become
t as this Theory is followed
with those implied in the
Upanishads. I am alone responsible for the method, the classification, the notations and the equations. These constitute the peculiar feature of this essay.

The frequent use of mathematical and scientific forms need not scare away lay readers. Except in one or two places which have been put within brackets there is really no advanced mathematics and the scientific forms employed are also generally of an elementary character. Mathematical and scienti : readers on the other hand should not take me to task for perverting the instruments and methods of exact science from their proper and established usage. I have employed these instruments and methods providing a sufficient safeguard of definitions and interpretations in nearly every case.

No one can be more keenly conscious of the many essential defects of the present essay than the writer himself. *First*, the Theory can be hardly expected to be placed on a sound and satisfactory basis without two or three supplementary volumes. *Secondly*, many of the promises involved in the body of this essay it has not been possible to redeem in this volume, and also many important

issues have been raised which can be only very meagrely dealt with within the present scope. *Lastly*, relying almost exclusively on self-intuition I have had to emphasise my central ideas in several places and connexions even at the risk of verbosity and repetition. There is also a pretty long list of typographical and other errors. The list is not, however, an exhaustive one.

In conclusion, I desire to convey my grateful thanks to my friend and pupil Sj. Purnasashi Bose, B. Sc., for the constant service he has rendered to me in bringing out this book—a service which I deem invaluable. My best thanks are also due to Sj. Suresh Chandra Chandra and Sj. Sailesh Chandra Chakraberty.

PANCHABATI VILLA,<br>Manicktola, Calcutta.<br>*June, 1914.*

P. N. M.

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# THE APPROACHES TO TRUTH.

## 1. *Fact as Continuum.*

Existence for me at any moment is a tissue of continuous, undivided experience. It is a single pulse of Fact: not a configuration of distinct points, not a synthesis of separate elements. I may be wide awake, and the objective world may wholly or largely occupy me: I am witnessing, for example, the sullen array of a mass of clouds on the horizon. In the actual Fact of the moment—in the present pulse of existence,—all antitheses lie concealed, all theoretical distinctions are lost: me and not-me are confounded together, the subjective does not oppose the objective, feeling has not drawn itself apart from fact. I *am* the mass of clouds for the time being: the scene and its witness do *not* as yet sharply divide existence between themselves. The mass of clouds need not indeed exist at any moment for me as an absolutely homogeneous tissue, a fact presenting no internal diversity of features: it need not be a simple fact in the sense of being a barren, monotonous something. On the contrary, there may be endless varieties imbedded in that single tissue

of fact, varieties of form, light and shade, and colour. While I am looking at the cloud, many of these features are certainly there in my perceptual fact of the moment, but they lie imbedded and swept together in a peculiar fashion: the cloud as it exists now for me is a 'complex' no doubt, but not a synthetic 'manifold'; it is a continuum but not a configuration; the oneness and continuity of the fact do not appear as over and above the separate points and features of the fact themselves; the whole does not exist as the composition of the parts; it is a complex unity and not a totality. Indeed it is a phenomenon in which the whole does not draw itself apart in contrast with its parts: a relation of the two aspects of a thing——the whole-aspect and the parts-aspect——which is readily appreciable in feeling, but not capable, from the very nature of the case, of verbal description. Thus the position of normal perception in regard to an objective fact is this:

The whole exists but is not differentiated in thought from the parts. The parts, or many of them, exist, but not differentiated in thought from the whole: what exists to my thought may indeed develop into a whole *and* parts included in it: it is a primary stuff for all sorts of differentiations to begin; but in the concrete fact of the moment I know nothing of a whole in relation to its parts --though the fact is undoubtedly one-in-many, I am actually attending to neither one-in-relation-

to-many, nor many-in-relation-to-one, and hence am not conscious of the distinction of one and many at all. So that the fact for me at this moment is either an indescribable 'unity' or an indescribable 'manifold' : if a name is to be given, I may propose this : **undifferentiated complex continuum** or **Fact-Stuff**.

But are not the points and features in the fact-stuff itself sufficiently clearly discriminated from one another ? Undoubtedly ; without discrimination of some sort the thing would not appear to me as a 'complex' at all. The different positions and features are discriminated, but in a peculiar way ; at a given moment it is a simultaneous discrimination of positions and features :—my attention seizing upon a number of varieties at once and not moving from point to point and feature to feature successively ; it is again a discrimination which is not expressible by a number of explicit judgments such as A is other than B, B is other than C, and so on. Thus, though a given point A is perhaps discriminated from all other points, it is not yet the subject or the object of an explicit act of judgment. It cannot be called nascent discrimination indeed, for each point or feature stands out boldly from the background so that its individuality can never be missed : shall we call it intuitive discrimination—a way of putting the thing which of course explains nothing, but which indicates nevertheless that the native constitution of a first-hand fact cannot be portrayed in the colours

and symbols that may exist for analysis and reflection?

While I am looking at the cloud, only some parts of the object are prominent in my mind: there are parts in it which have the greatest vividness and definiteness, *viz.*, the parts occupying the 'focus' of my attentive gaze; but the whole content of my knowledge at this moment is not exhausted by these parts of strongest emphasis. Beyond these parts extends the out-lying field of comparative inattention—perceptual zones which lose in vividness and definiteness in proportion as they are removed from the centre of clearest apprehension. Let us call the psychic tone of two features in a total object of perception t and t′, and let us denote their distance from the focus of attention by d and d′ respectively; then, other things being equal, we may say that $t : t' :: \frac{1}{d} : \frac{1}{d'}$. We have not materials ready at hand yet to apply the law of inverse *square*.

[The reason for the above ratio is not far to seek. Subjective attention being one of the factors whose variations determine the variations in intensity, definiteness &c. of a fact for the mind, we may represent the relation between a fact ($x$) and the subjective attention bearing on it ($a$) by this equation (omitting the other factors): $x = \phi\ (a)$. Clearly the different values of $x$ will depend, among other things, upon the values of $a$. Taking the attending Ego as our origin, and Time and

Space as our co-ordinate axes we can almost graphically represent the *curve* of a perceptual fact ; or, we may propose other co-ordinates. Suppose the Ego's given point of view be O (origin), the amounts of attention put forth by the Ego be represented by the ordinate, and the distances from the given point of view by the abscissa. There may be yet other ways of representing and illustrating a phenomenon. The values of $x$ depend upon those of $a$ ; but the value of $a$ in respect of a particular point depends, among other things, on the distance of that point from the point of view where for the time being $a$ is being focussed. We may represent this relation also by another equation $a = \phi(d)$, where $d$ stands for the distance of a particular point from the focus of attention. So that combining the two equations we get a third :—

$$x = \phi \{ \phi(d) \}$$

This shows that the psychic tone of a point in a complex continuum of fact must depend upon its distance from the focus where attention is concentrated for the while. Attention varies from no-attention (o) at the farthest limit of the field of view to greatest or right attention at the focus $\left(\text{say, } \frac{\pi}{2}\right)$ : there are points beyond which we do not attend, and one or more where we most attend. Attention, again, varies not by leaps and bounds, but by infinitesimal increments. Hence if $a$ is $= \phi$ $(d)$ at the farthest limit of the field, at the *next* nearer zone of the field it is $= \phi\,(d + h)$. And,

therefore, regarding $d + rh$ as $a$ variable $a$, we can represent the total amount of attention engaged in the field by this expression :

$$\int_0^{\frac{\pi}{2}} \phi(a)\, da. \Big]$$

This calculation of attention and psychic tone would be premature at this stage, were it not my purpose to get a picture of the fact-whole in precise outlines. The almost imperceptible shading off of attention, and therefore of psychic tone, from the focus to the farthest limit of evanescence, is a circumstance that we cannot afford to lose sight of in understanding the relation in which, in normal and natural perception, a sectional object stands to the entire object—the fact-part to the fact-whole. So far as normal and natural perception goes, the fact-whole is the one undivided fact before us : the more prominent parts are indeed in some way discriminated from the obscurer parts—the picture is certainly not a homogeneous whole for me,—but I do not certainly too oppose the one set to the other as separate terms of thought, have no thought of a centre of concentration *as distinguished from* the outlying margin of gradual diffusion : for me the two aspects co-exist, but not as terms of actual judgment ; as intuitive associates but not as logical correlatives. A Fact is a picture or a melody which the soul grasps as a whole and not piecemeal : it is a whole rich with

colours and shades, tunes and breaks : but to the eye and ear of the soul neither the one nor the other is a *composition* of these : each is a pregnant whole of infinite promise—study and analysis may conjure up all conceivable things and relations out of it, but to intuition it is a standing perplexity of a whole differentiated yet not differentiated, a confusion of aspects or categories which logical thought must sharply distinguish from one another. A Fact is a contradiction in itself—it is neither a simple whole, nor a simple sum of parts, nor again a whole discriminated in thought from the parts: it is a whole-together-with-the-parts where the logical relation of whole and part has not yet emerged in thought at all : there is apprehension but no judgment. I understand logic, but I do not understand Fact, though I live it, and even *be* it.

## 2. *Subject and Object fused together in the Fact-Stuff.*

The treatment of the fact-stuff is not complete yet, but to the consideration of the remaining two points I will devote a separate section. The Fact-stuff or the concrete fact of the moment is not merely an objective whole in which differentiations appear without being expressed in explicit acts of judgment : it is a stuff in which even the subject and object lie lumped together without logical discrimination, and it requires subsequent analysis to bring each into prominence relatively to the

other. The subject is attending, he is bringing his mental context of the moment to bear upon the situation ; and this attention and subjective touch cannot but superimpose an inner construction upon the outer structure, whether these correspond to Kantian 'form' and 'matter' or not. There is no mysticism about such double nature of the fact-whole : it is clear to immediate perception. Will it be a full and adequate description of the cloud at which I am looking to produce a catalogue of merely its 'objective' characters? Is it not an integral tissue into which my mental background and 'fringe' of the moment, my organic sensations —to name only the prominent factors—are curiously woven together? To name the objective features alone is to set up an arbitrary wall of partition between two abstract segments of one concrete, natural whole. The concrete fact of the moment is a curious confusion of 'objective' features and 'subjective' affections and reactions, in which differences exist without logical distinctions. As hinted before, subsequent reflection may proceed to differentiate and integrate in all possible manners this presented fact-stuff, may rescue subjective elements in their confusion with objective, stow apart feelings and processes into classes, and build psychology : but keeping the idea of 'confusion' sufficiently clear of the idea of dead, barren homogeneity, we may safely assert that the logical distinction of 'subjective' and 'objective' is not less impertinent to the nature of the concrete fact-whole than are

the distinctions of 'whole and part', 'many and one'. This tissue of subjective and objective threads woven together into an actual, though alogical whole, will perhaps receive the recognition it merits after the appeal has been laid courageously at the door of unsophisticated intuition: curiously the recognition of Science has been the tardier the nearer home a truth goes to the warm precints of life. In all normal tissues of perception in which the attention does not settle with too marked an emphasis on the outer features, whenever, that is to say, my sense-perception is easy and not disturbed by a too much concentration of tone at some points and a too slight diffusion over the rest, it is accurate psychology to note that a mass of my somatic sensations, particularly what Prof. James has called cephalic sensations, form as it were a starting zone of a peculiar 'warmth and intimacy' from and around which spread other successive belts or zones constituting in their intuitively discriminated—not logically—wholeness the complex objective picture. If, however, too keen an interest is awakened at the outskirts, and consequently, too busy an engagement of attention there, the starting basis of cephalic sensations may be very much obscured, its prominence very considerably put out: the converse may also conceivably be the case on some occasions—a too high prominence of the subjective nucleus at the expense of the outlying fields: but in all cases, whether normal or extreme, a mass of body-sensations do enter as a necessary

datum into the constitution of a perceptual whole —and of every thought for the matter of that— which, whatever its fluctuations of intensity and definiteness, is never without them. This mass of body-feelings constitute the fundamental note which ushers, pervades and supports all Life's Song: this is an origin from which extend the dimensions of attentive function, the direction and the magnitude of attention, so that the quantitative constitution of a mental fact may be represented by an appropriate Cartesian graph.

[By 'quantitative constitution' of a fact I mean those features of a fact, *e.g.*, relative intensity, definiteness, &c., which admit of a quantitative comparison: for example, if $I_1$ and $I_2$ be the intensities of any two parts of a mental whole, their relative values can be indicated by differences of curvatures. Suppose the point P is at the focus of my attention; if I represent the direction of P by a straight line OP, the direction of some other point of perceptual field, $P'$, may be represented by another line $OP'$, making an angle $\theta$ with OP; similarly the direction, with respect to the attention of the moment, of any point $P^n$ may be represented in relation to the given straight line OP, if the vectorial angle $\theta$ be given. Now, clearly, attention varies inversely as the magnitude of the angle $\theta$: the remoter a point is from the focus, the less is the attention that it receives; previously we have represented this relation by the equation $a = \phi\ (d)$, now we may represent it by $a = \phi\ (\theta)$. So far

we have assumed the attentive-energy put forth by the subject to remain constant : this remaining constant, the bestowal of attention on any point in a perceptual field (shall we say ideational field also ?) is determined by the last equation. But attention is not a constant magnitude. The focus of attention without being shifted, the subject may vary his attentive energy : he may attend more intently or less even to the focus : the amounts of attention engaged at different moments need not be, and as a matter of fact, are not equal. Suppose we represent these various amounts by varying circular measurements of subjective activity : the maximum amount of attention at the disposal of the subject being denoted by a constant, $\frac{\pi}{2}$ ( but is there a constant maximum for all subjects and for all circumstances ? We shall wait and see.), any attentive activity may be denoted by a fraction of this constant, say, $\frac{\pi}{2n}$ where n is a finite positive integer. Hence the actual bestowal of attention on any point is determined not only by the equation $a = \phi(\theta)$, but by another, *viz.*, $a = \phi\left(\frac{\pi}{2n}\right)$. Multiplying together the two equations and extracting square roots we have,

$$a = \pm \sqrt{\phi(\theta)\, \phi\left(\frac{\pi}{2n}\right)}.$$

We shall see later on if any meaning can be attached to the double sign. In the meanwhile, let

us represent this relation more simply by the equation $a = \phi(x, y)$. The value of $a$ varies as the two variables, $x$ and $y$, which we may, in the light of the foregoing explanation, call the direction-variable, and the magnitude-variable. The one may be regarded to remain constant while the other undergoes variation: the total amount of attention engaged remaining constant, the direction of a point P in the field may be supposed to vary; again, the direction of P remaining constant, the subject may go on increasing or decreasing his attention. Hence, taking differentiation, the relation between $a$ and $x$ and $y$ may be represented by the following equation:

$$da = \frac{da}{dx}dx + \frac{da}{dy}dy.$$

That is to say, the total increment of actual attention is the sum of its partial increments, arising from the differentials of each of the variables, direction and magnitude, taken separately].

It is granted that a mass of subjective feelings —the chief among these being the cephalic—is interwoven into the texture of an objective fact as it is perceived by us: at the moment of actual feeling, these home contributions are not indeed logically discriminated from the alien matters, but they are nevertheless there, and certainly not as unconscious or subconscious elements: also as already described before, the home *plus* alien factors constitute neither a simple manifold, nor a simple

unity, nor again a *logical* unity in difference, nor even a continuum in which the home and alien factors have put on their respective badges or labels. To intuition such constitution is patent enough, but to understanding it is unutterable and inscrutable. Reason can say perhaps what it is not : intuition alone can reveal what it is. The next question that we put to ourselves is this : What is the place of Time, Co-existence and Succession, in the constitution of the Fact-stuff? While I am intently gazing at the cloud, am I at all conscious of a present, a past and a future : do I actually think that this is a fact that has succeeded another in my mental life, that it is one that is changing *while* I am gazing at it, and it will be succeeded by another fact in the flow? Not at all; unless it be the special case in which flow or succession is itself the theme of my study. In all normal, ordinary perceptions, there is no thought of time-dimensions at all : it is analysis and abstraction to cut up a concrete fact-whole into successive fragments and to represent it as a series in time. It is certainly not 'radical empiricism' to split up thought into time-sections, to conceive of a series of pulses of thought where there exists, to immediate feeling, a single stretch of thought. If for five minutes I am looking at the cloud and have no explicit thought of time-relations, I must regard my cloud of five minutes' duration as a single fact, and *not* as a series. It is a series to analysis and study, but not one to feeling. If for the whole of

this afternoon I have not once thought of Time, my mental life, both perceptual and ideational, of this period must be taken as a single stretch of Fact-stuff: the series, the flow, the stream lives in the psychologist, and not ordinarily in the fact. Nay more; if a dog or a savage, has run his whole race of life without ever pausing to *think* of Time, his life-history is but one fact, and not series to him: it would be a series if he woke up a psychologist one fine morning; but one need not be a psychologist to live and even to feel.

I will go even farther than this. When time-relations do enter my thought and I am distinctly conceiving my experience as a flow or a process of evolution, the experience is a single tissue of fact and not a series: the circumstance that it is conceived as a series does not make *it* a series: in its presentation the whole experience is a curious confusion of a variety of strange elements: the subjective and objective factors are there without being logically discriminated, time-relations may be there but not being logically discriminated either, and not therefore constituting the experience to be a presented series: all are lumped together, all features and relations are interwoven together, and it is to the eye of representative conception that the affair assumes the aspect of a change in time. Suppose I feel thus: A after B, B after C, C after D, and so on. Is the actual experience as presented to me a series consisting of the terms

A after B, &c. ? Do new facts continuously appear and disappear, and is the experience intuitively presentable as a sum ? Does not the entire experience, consisting as it does of a number of terms, come home to my intuition as a single stretch of fact which conception must take to pieces but which in itself refuses to accommodate all logical categories ?

The interest in life is more usually a practical than a theoretical one, and it is only at intervals that I pull myself up from the warm tissue of facts, hold the probing and dissecting knife and turn a cold psychologist. It is only at these rare moments that life yields itself up to logical construction, things and relations fall apart from one another, and facts appear arranged in the perspective of history, of a temporal scheme. During the whole of this morning such occassions have but rarely come, and though writing at my desk now I recall the past and necessarily conceive it as a flow, in the warm experience itself there was surely nothing to suggest such a construction, and my impression of it is this : The experience in question is undoubtedly a fact in time, if we mean by this absolute, objective time ; in my psycological review at the present moment it is undoubtedly and necessarily a fact in time, a flow, or even perhaps a series. But in itself, so long as it is warm and immediately served, my soul is full of the feast spread before it, I *am* the experience and not a measurer of it, my life is simply one Fact and not a conscious summa-

tion and composition of discrete fragments; time is a form that yet lies idle in the armoury of logic, the subject is not yet a nucleus that has pronounced itself out of the confused whole of the experience-mass.

But a last and a more formidable question still remains. While all elements lie huddled together in the original mass of experience, does not the Subject, the Ego, sufficiently clearly distinguish itself from the mass which it regards as its Object? I am not enquiring about the subjective affections which are certainly interwoven into the tissue of the experience-whole; but is there not a self-distinguishing Subject—while all are lost in the general confusion, do I not myself stand aloof as an onlooker, an witness and is not this circumstance the very possibility of the 'objectivity' of the experience? In this way, at any rate, it may be claimed that experience is a logical duality, a conscious and articulate subject-object-interaction. But is it a logical duality yet, an articulate subject-object-stress? Logical duality is certainly necessary to make an 'object' of the given experience, but is it necessary that an experience must become a full-fledged 'object' in order to be experienced? Experience itself is neither, ordinarily at any rate, objective or subjective: this logical distinction is not at all pertinent to its intuitive nature. So that the alleged logical necessity for a self-distinguishing subject vanishes: if experience is not yet an 'object,' why must we drag in a 'Subject' to do an

hypothetical office that is wholly premature in intuition? This *a priori* ground apart, the actual constitution of this fact itself has nothing to show that even this logical distinction of subject and object has a place in it. While I am witnessing the stealthy process of the cloud, I have become the cloud, and am not certainly a subject discriminating myself from the cloud : at a given moment of perception my entire attentive consciousness is taken up by one fact and not two. I think it is experimentally impossible to attend to, and become aware of, both the attended object and the attending subject at one and the same point of time. Actual experiment seems to prove conclusively that while I am attending to O (object), the subject, S, has retired to the background of consciousness : parts of O itself have indeed various shades of attention and awareness cast over them, but the attending subject, S, seems to retire completely from the field for the moment : here at any rate the law of physical impenetrability wholly applies. O can occupy consciousness at any moment only by displacing S for that moment, and *vice versa*. My consciousness at any moment can be represented by either of the two equations $C=O$, or $C=S$, but not certainly by the equation $C=O+S$. O and S must have each the whole of my attentive consciousness or not at all. How then does the familiar relation of subject and object emerge into consciousness at all? How do I come to know that there is the Ego attending to and apprehending

its object? For such knowledge two distinct operations have to be gone through: attention or consciousness must oscillate between S and O, as it actually does in immediate perception; there must then succeed a new thought—conceptual and *not* perceptual—which embraces S and O both, and regards the one in relation to the other. **Oscillation** is the rule of immediate feeling, as unprejudiced experiment will, I believe, conclusively show. When I am regarding the cloud for some time, and have not my attention bound too exclusively and jealously by the spectacle, my consciousness seems to oscillate, more or less rapidly, between the attending self in me and the cloud: now it is *wholly* the object, then it is *wholly* the subject, and then it springs back to the object: the entire process is positively an oscillation. Simple, natural feeling is thus essentially a unity: life can play but one part at a time: duality or plurality is an after-thought: Fact is one, though the universe may be a 'pluralistic' scheme.

Thought-oscillation is a topic to which I will presently return. So far my study of the concrete fact of perception has disclosed these features:

To intuition Fact is a curiously complex one, and not a manifold, a synthesis: even while the fact is being conceived as an actual configuration of distinct points or features, the thought is one and not a sum—thought of a many and a sum is a unity and a whole, the idea of a configuration is not a configuration, the thought of a series is not a series.

In the *first* place, a fact may present a differentiation of parts and features within itself, but these parts and features though apprehended in the presentation of the fact are certainly not expressed either as subjects or objects of actual judgments: the whole is taken not as the correlate of its parts nor are the parts taken as constituting the whole: both co-exist in the thought without being thought as a *both*: 'forms' and 'categories' meet in the fact without surprizing or recognizing one another. Does not the meanest thing in the universe thus carry a thought too deep already for philosophy?

In the *second* place, the differentiation of a vivid zone in perception from outlying zones of vanishing psychic tone, the seizing upon merely the crest of an wave of fact as distinguished from the wave as a whole, the noting of the definite outlines of a picture in contrast with a more or less blurred background, is a feat which is immature in warm, actual feeling: a zone, crest or picture so differentiated is a sectional object that has become cold and abstract: in the warm living tissue of feeling the field, wave or the picture exists in its immediate entireness, and not as a composite phenomenon in which different kinds and degrees of tone are logically discriminated: if at the present moment the sky present to me a certain aspect, I cannot break up this whole aspect into discrete parts of varying quality and vividness, and regard my total object of the moment as the synthesis of these partial objects. In life which is selective and

pragmatic, I may think and speak of an object as though it were equivalent to those portions of a feeling-continuum upon which my attentive effort has been most expended, and which therefore stand out in boldest relief: the whole does not interest me, only a part perhaps does: thought therefore selects the part which it likes and requires and fancies *this* is the whole object for it: the natural setting and background of this little, partial, pragmatic object it silently ignores and wisely too But the natural setting, the larger and fuller object exists, whether or no I would like to recognise its overlapping or even sustaining presence: Nature cannot fashion existence to suit my pigmy purposes. So it is a convenient illusion to forget the whole, and to live snug and complacent in a little slice: but the fact is the whole and not the slice at any moment I am considerably vaster and deeper than what I require and persuade myself to be thought is an wave whose lighted crest alone appears to dazzle and arrest my introspection: life is lavish of its presents though I would fain build a little worm-world to live in and regard existence far too easily. This is how reality and creation are mistaken for each other; the partial, abstract, pragmatic object silently steps into the place of the entire, concrete, real object: I look almost aghast when I am told that my actual fact is wider and deeper than what I myself believe it to be: the fuller acquaintance of the fact puzzles or even astounds me: truth really appears as stranger than

fiction. But all the same, I must scrupulously cling to the native constitution of the fact when it is my very purpose to know it as it comes, and lay aside for a moment all practical motives for its manipulation. Now, in its native constitution the obscurer vistas of a perceptual field, the outskirts of a fact as distinguished from the central positions, do not certainly draw themselves apart in thought and become a term of logical discrimination: the consciousness of the moment is entire and not parceled out among a multitude of configurated points.

In the *third* place, the simplicity of a given experience is not impaired by the fact that analysis may reveal in its constitution several elements which have a subjective character along with others that are regarded as objective. That massive organic sensations, and particularly cephalic sensations, enter as constituent factors into the given experience, is a fact that ought to be patent to clear inspection: the given experience is undoubtedly a mass into which these feelings pour themselves, and the so-called objective features lie blended together with the so-called subjective: the discrimination of features wearing different badges is an after-thought. As before, a sectional, abstract experience is tacitly allowed to displace the entire, concrete experience of the moment: experience is made to order, is fashioned according to practical ends. Life is ordinarily swayed by such ends, and is not particularly solicitious about truths *as* they

come : even facts are to me as I want them to be · I *know* as I *wish* to.

In the *fourth* place, the given experience is a fact that may involve both the dimensions of Space and Time: it is a configuration and it is also perhaps a series: but as we have seen, an experience regarding a configuration and a series need not be and actually is not, a configuration and a series itself. The thought of 'A after B' is not a thought of B followed by a thought of A, nor is the thought 'A together with B' a thought of A by the side of a thought of B: all this is now accepted psychology. I will go farther than this: When I am looking at a patch of cloud, my object is undoubtedly an extended something, and extension is certainly an aspect of my experience; but do I actually discriminate this extension as a separate term or element of thought? While undoubtedly experiencing Space directly, do I explicitly make either a logical object or subject of Space? No. Space is there without, however, drawing itself apart in thought; into the same continuous mass it is blown as contains in logical confusion all conceivable matters for future elaboration and classification: on the bosom of the same mother stuff they lie asleep, oblivious of each other's presence, to wake up in the light of Reason possibly as friends or foes! Time again is lost even more completely than Space in the slumber of birth on the lap of experience. A patch of cloud is nothing if it is not an extended something; Space is

immediately given in sense-experience. But where is Time in my perception of the cloud? At a given moment there is surely no thought of moment——I do not take my experience in time-directions at all: the fact is not woven into a temporal scheme yet. A flood of genial sunshine has burst forth upon Nature, and my cloud is now swimming on the celestial flood like an angel on wings regarding with silent awe the Creator's masterpiece—the Earth! Now, where is Time in this enchanting sight? The fact no doubt exists in Time, and in reviewing and reproducing the fact I have no doubt dealt in tenses too; but in the warm living experience as it comes and lasts, am I not completely lost is not my whole being taken up by the scene before me—and *am* I not the scene for the moment? The fact possesses me, I have not sufficiently roused myself to possess the fact and fashion it to my ends: the first possession is too unpremeditated and too complete to allow my own forces to bestir themselves—the forces of Understanding, that is to say, logical forms and categories. Time is nowhere in this first possession, it appears in the reaction of the self. Such absorption of my being in the Fact, the whole fact as it lives and not a mere cross section of it, is not very happily expressed by calling the fact a 'presentation': a fact is my being actually lived: in the original its nature is unspeakably apprehensible. Even when my experience relates to a change in Time, a progress, a flow, the immediate experience is not

a fact explicitly embodying a thought of time ; feeling changes but it usually changes without ever thinking of time—though idea of Time is as much necessary for a conception of the change as the idea of Space is for an act of spatial imagination. As I have suggested before, the plan of cutting up the flow and stretch of mental life into temporal and spatial points and tracts is nothing short of an outrage on the 'original' of experience : life works and mind thinks precisely upon such an outrage, but the original, the stuff, is for me a continuous mass of thinking, feeling and active awareness, and while Philosophy is lost in her reverie of mental atoms, their configurations and displacements, existence glides smoothly and unconcernedly on, and when rubbing my eyes I regard it with a steadfast and courageous look, it is all unutterable mystery !

In the *fifth* place, the fact is not yet opposed to a self-distinguishing Subject : the original is neither subject nor object of any judgment simultaneous with it : it is not an object yet, it is simply a fact. The unity of the fact is not destroyed by the introduction of the logical polarity of Subject and Object : even then thought oscillates between the two poles—now it it *wholly* the one and then it is wholly the other.

The unity, simplicity, massiveness and mystery of a given experience or fact-stuff are the characters that we now recognise : the fact-stuff is the datum from and upon which our thought's construction

begins. There are three broad landmarks in this constructive work. In the meanwhile we note that the immediately given Fact, the original and concrete as distinguished from the treated and conceived facts, comes nearer to the Absolute, if there be any than any of our precious, imperious notions and conceptions.

Truth is at home with Experience. (1).

### 3. *Treatment of the Fact-Stuff.*

The important distinction between the concrete fact-whole and that part of the whole which particularly receives most regard and therefore attains to greatest prominence, has been already noted. At some portions of the experience-continuum, there is a concentration of psychic tone, while over the rest the diffusion of consciousness is slight. These latter tracts are not actually below the threshold of consciousness, however. They are integral parts of the total experience quite as well as the favoured zone : the nucleus alone is not certainly the concrete experience of the moment. If we graphically represent a fact by a curve, the favoured zone or the tract of strongest psychic relief will have to be represented by the maximum positions of the curve. [Thus : Let the extensity or massiveness of an experience be represented by the axis of $x$, and the psychic tone of the experience by the axis of $y$. Then, appropriately, we regard our experience as a curve represented by the equation $y=\phi(x)$. Assuming the curve to be continuous

within certain assigned limits, we see that any increment or change in $x$ (say, $\Delta x$), will occasion a corresponding increment (say, $\Delta y$) in the dependent variable, $y$. Psychologically interpreted, any point or feature in a massive experience has its own definite place in the mass : the relative positions of all points in the experience are definitely given, so that if we graphically represent the *mass* of an experience, its extensity that is to say, by a straight line simply (this is an abstract representation though a line having a single spatial dimension, and a mass of experience having at least more than one dimension), different points of the given experience will have their different abscissæ along this line. Now, since the psychic tone of a point in the experience-continuum depends, among other things upon the relative position of that point in the continuum, we see how any value assigned to $x$ will determine the value of $y$, and also how an increment in the value of $x$ will occasion a corresponding increment in the value of $y$. If P be any point in the continuum whose relative position is represented by $x$-length measured from an origin, the psychic tone of P will have a value corresponding to $x$, and may be represented by $y$-length measured from the origin. The ratio of the corresponding changes in the value of $x$ and $y$ will be, according to the usual notation, $\frac{\Delta y}{\Delta x}$ or $\frac{\phi(x+\Delta x)-\phi(x)}{\Delta x}$. And we have the true and precise measure of the rapidity with which psychic tone $\{y$ or $\phi(x)\}$ varies when

the relative position of a given point in the continuum is made to vary from an assigned value, by taking the limit of the ratio, or by reducing $\Delta x$ to an infinitely small value, by $\frac{dy}{dx}$, that is to say. Now suppose $x$ increases continuously, and in consequence of this increase $\phi(x)$ also increases through any finite interval however small, and this increase of $\phi(x)$ or psychic tone continues until $x=a$, or a point in the continuum of experience reaches a certain relative position; but after this position of $x$, the psychic tone decreases; the value $x=a$ represents the limit where psychic tone ceases to increase further and begins to decrease; then, $\phi(a)$ will have to be regarded as the maximum value of $\phi(x)$. In other words, $y=\phi(a)$, where $a$ is a certain value assigned to $x$, gives us a point of maximum psychic tone in the given continuum of experience.]

What we have so far regarded as a mathematical point may in our case be a small zone or tract of strongest emphasis. This small tract is marked off from the rest of the field by a much greater concentration of vividness or tone over it; it is a part of the whole which really interests me at the moment. It is that part of the given whole which I require to accept and possess, the rest, though undoubtedly given in the experience, I dismiss with hardly any notice. Thus my knowledge is essentially practical and selective, it refuses to be encumbered with massiveness of concrete experience; experience is too large for its ends. It is these

favoured tracts of experiences, the features of greatest interest and tone, which come up as materials for ideational processes. How much wealth of living experience is silently buried and lost! I fancy I am regarding a particular rock while the experience of the moment has really ushered a whole landscape into my consciousness : everything except the rock in the sublime landscape has now retreated to the wilderness and is not the least cared for. The magnificence of clear, starry heavens may dwindle down at a given instant to the shy, twinkling lustre of an obscure star in my attentive and searching look. The tranquil majesty of a sunny sea may shrink in my regard to the weird flutter of the wings of a solitary sea-gull against the pensive azure sky. Do I not often similarly localize and specify in a vague, massive subjective mood with which my whole being is for a moment completely overcast? When, for example, a profound unrest has seized upon me, where is its full import and bearing, as I proceed to define, name, classify and explain it? Experience, whether emotional or presentative, immediate or ideational, bursts in my soul like a flood of music surging in unmeasured sweep: I cannot refuse it admittance. I cannot even mistake it—it is here and there and everywhere, and it has cast my being into its own mould for a while. But I think and act as though a few prominent notes in the music were all: I assume for my object not the concrete whole experience of the moment, but only that portion of

it which happens to bind my interest and engage my focus of attention. Thus, the practical object is silently allowed to displace the real object, not indeed in actual experience but in idea and speech. I say 'I see a rock,' or 'I hear a note,' or 'I have an headache': all this may be a convenient and practical way of putting things. But such conceptions or descriptions do not go home to living mass of experience itself: to get at it I must keep back motives. To live in the light of truth I must come out and surrender myself, and must not pretend to study it through an aperture in the soul's window. We have thus far known the first natural treatment of the fact-stuff: I may call it practical or **pragmatic fact**.

Experience as I pretend to know it is a chosen and self-determined fact. (**2**).

The treatment of the fact-stuff after this first stage is readily recognised. Here we have first the exploration and differentiation of the experience continuum by movements of attention—the vaguely apprehended field is made to yield definite presentations by the incidence of the search-light of attention upon different portions of it successively. Such progressive rising and sinking of points in the continuum, the appearance and disappearance of different features on the summit of highest psychic tone, constitute what we may call the differentiation of the given stuff. It is the resolution of the fact-stuff into a multitude of pragmatic facts. If $P_1$, $P_2$, $P_3$......are the points which successively

thus emerge into clearest consciousness, the experience, E, is not ordinarily taken as $P_1 + P_2 + P_3$ ...... At a given instant, experience does not lose its unity and massiveness by such differentiation. At each point of time, experience is integral with its emphasis or accentuation laid on a particular point, $P_1$, or $P_2$, or $P_3$. When I am exploring the starry firmament with unaided vision or with the telescope, now I have an experience of a considerable tract of celestial space with my consciousness concentrating at a particular star, and then a massive celestial view also with its emphasis shifted to another star, and so on. At no time, therefore, the mass or whole really ceases to exist: never is the pragmatic, chosen fact complete and sufficient by itself. If we represent an experience emphasised at $P_1$ by the symbol $[E]^{P_1}_{t_1}$, where $t_1$ stands for a given instant, then our successive experiences are clearly

$$[E]^{P_1}_{t_1},\ [E]^{P_2}_{t_2},\ [E]^{P_3}_{t_3},\ldots\ldots[E]^{P_n}_{t_n};$$

experience should not be ordinarily expressed by the equation $E = SP_n$ or the *sum* of the points that have been differentiated; nor can it be proper to represent experience by the following equation:

$Et_n = P_1 + P_2 + P_3 + \ldots\ldots + P_n +$ the mass not yet differentiated. That is to say, experience at the *n*th moment of differentiation is not equivalent to the sum of the successively emphasised points *plus* the mass which still remains untreated or

undifferentiated. The emphasis of a moment is practically complete at one point, so that there is little or no division of strongest emphasis among the points in a mass; hence, we cannot express an experience as the sum of several especially emphasised points, as we wanted to do in the last equation. $n$ different points might have been differentiated in $n$ different moments; but certainly all these points do not retain their emphasis at the $n$th. instant; as one point rises another sets while the present point is ascendant, the past points have sunk more or less completely. Therefore, at each instant experience is an undivided mass with its strongest stress laid on a small tract or feature, even though the experience may have been already treated for some time. I do not suggest, however, that a previous emphasis or emphasised point has nothing to do with a subsequent emphasis or emphasised point, that it does not matter whether an experience is being treated for the first time or has already been treated for some successive instants. Let us put the question more definitely: Let the experience of the moment $t_n$ be $[E]_{t_n}^{P_n}$, where $P_n$ is the especially emphasised point; now, will this experience be what it is if it has not $[E]_{t_{n-1}}^{P_{n-1}}$ &c. as its forerunners? Is an experience independent of its antecedent states or forms? I have one form of experience *after* several forms: I have a view of the firmament especially emphasised

at the star Sirius after I have already searched the heavens for other bodies. I turn to it after I have already seen others: would my experience now—when especially referred to Sirius—be what it actually is if I were to *begin* my study of the heavens to-night with Sirius? Certainly not; a subsequent experience is undoubtedly affected or tinged by a previous one: experiences are not dealt out to us cut and dry and hide-bound. That a previous experience should penetrate and fuse in some way into a subsequent experience is indeed a condition that seems to be required by brain-dynamics; psychology may pretend to fashion for us cut and dry, discrete mental facts, but in the highly unstable brain centres molecular commotions cannot be made to appear and disappear at a moment's notice, and irrespectively of the laws of motion and persistence. As it is, a future fact in appearing can never expect to find the stage completely deserted, lulled into profound stillness; the stage is lively with the unmistakeable echoes of the scene just played out, the present is full of the romance of the past. But the echoes of the past mingle with the thrills of the music that now holds the stage, the romance of the by-gone settles as a halo about the living present. The past though projecting itself into the present, cannot keep itself distinct from the present: my experience now is quite as undivided a mass as it would be if it knew not a past at all. So experience, though undoubtedly tinged with the complexion of the past, does not consciously discrimi-

nate between what it brings itself and what it owes to its usherer, the legacy of the past. Experience is a whole whatever complexion it may take on and however diversely it may be constituted. We note, however, that the growth of experiences, each undivided and massive in itself, by the shifting of emphasis successively on different points by movements of attention, constitutes what I should call the *perceptual* treatment of experience. The original experience with a given pragmatic fact, and the successive experiences,each with its own pragmatic nucleus, developed by attentive movements, give us the two stages of this *primary* or *perceptual* treatment.

There is one aspect of perceptual treatment which should not, however, be overlooked. A full-grown perception seems undeniably to involve thought-oscillation. There appears to be little or no oscillation in the original continuum. As I look at the mass of sombre clouds that linger over Heaven's brow like a pale cast of thought, my feeling of the moment appears to be quite lulled by the enchantment of its object: it is calm and complacent like the scene it enjoys. For a moment there is no unrest in the bosom of the feeling, no stir and flutter of exploring attention: immediate experience of a given instant is a state of mental equilibrium; for one moment the algebraic sum of all tensions is evanescent. All ordinary experience is a phase in a process of change—such at least is the construction which the

thinker necessarily puts upon it; each point or phase in the flow, therefore, is preceded by movements of feelings and ideas and is succeeded by them; but each palpably definite point or phase represents a position of momentary rest, a 'substantive part' in the ceaseless flux and transition of mental life, a place where the perpetual wanderer halts and takes breath and a moment's respite. Like a restless bird flying from tree to tree and branch to branch, thought perches for a while on a given experience; and it is those portions of the continuum, upon which thought has rested thus for a little while in its endless migration, that constitute the 'substantive' parts of experience floating in the relatively impalpable but continuous fluid of mental life. Thus my cloud now represents in my life-history a stage of momentary rest, a temporary satisfaction of thought's eternal quest. If I may be permitted to employ such scientific terms as 'disturbance' and 'displacement' in this connexion, I may say that experience in time, essentially in the nature of a disturbance, involves the displacement of the attention-focus or regard-point over a given continuum: this is no less true when I am startled in my reverie by a clap of thunder than when I am following with rapt interest the silver lining of a brooding sable cloud: there is no more essential breach of continuity in the first case than in the second. But this displacement, it must be noted, has no uniform rate and manner; it is only a displacement from *one* given place to *another*, where

each has sufficient duration and definiteness to be looked upon as an individual centre of regard, a place of tolerable substantive coherence and mental pause. The centre of regard, the substantive part, of a given experience should not, however, be mistaken for the whole experience of that moment: the whole experience is larger than its substantive part. Now, where do we feel the displacement of regard? First, within a given field of experience, my regard may move from part to part and feature to feature: each substantive part in it presupposes a previous displacement of regard and becomes the starting point of a subsequent displacement: each, however, is a place of momentary rest. It is not the point only on which my thought reposes for a moment, but the whole experience especially emphasised at the point at that moment. Using the old symbols I may say that what my regard momentarily rests on is $[E]^{P_1}_{t_1}$ or $[E]^{P_2}_{t_2}$, etc., and not simply $P_1$ or $P_2$, etc. There is displacement from the former whole to the latter. It is by such displacements that the given experience-stuff, E, is elaborated or as I have put it, perceptually treated. When E becomes an object of regard for some time, this displacement may take the definite form of an oscillation: oscillation of regard between the thinking subject and the object apprehended, and between the different points $P_1$, $P_2$,...of the object itself (note that E or experience-whole is a mass in which the subjective and objective elements are

both included.) : the oscillation is *within* the given experience. The angle and period of oscillation are not constant features : there are moments in my life-history when my regard seems to move with leaps and bounds over a given continuum, and when the displacement is brisk ; there are moments also when thought appears to slide up and down a minute arc, and when displacement is slow and dull. Thus though E may grow through such oscillation, any concrete, coherent state of it, say, $[E]^{P_n}_{t_n}$, is statical. By 'concrete state' I mean a mass of experience especially emphasised at a given point at a given moment ; also an experience especially concerning a change of emphasis from one point to another · the feeling of object as well as the feeling of process or transition. By adding the epithet 'coherent' I seek to distinguish the former from the latter ; though to describe a coherent experience—an experience coherent about a nucleus and to mark it down as statical are practically the same operation.

Secondly, if we represent the total experiences of two moments when they are substantially different—*e.g.* the vision of a cloud and the thought of the famous soliloquy in Hamlet—by $E_a$ and $E_b$, there is a clear feeling of displacement when my regard moves from the one to the other. In the flow of mental life it is these fairly articulate and collected experiences, $E_a$, $E_b$, ..., which are taken as mental facts, or rather the pragmatic facts within them that are so taken. The transition from one to

the other, the extremely delicate phenomenon of the one's fall and the other's rise, is not without its equivalent in feeling : the process affects us as the object does : we feel the displacement as we feel the momentary pause after it. But the object concerns us while the process usually does not ; hence the pragmatic thought takes experience piecemeal, and regards the facts of mental life as discrete. But feeling is continuous ; life is not an addition of separate facts, but a flow with no uniform motion, however. Like a point moving and describing a continuous curve my regard travels, with frequent stops, with a varying rate of displacement. It may skip over a few objective points, may with one leap proceed from $P_m$ to $P_n$ in a given continuum, but this leap is yet a subjective affection, is a 'distinct, though not logically discriminated, feeling-quantity : so that, in the period when I am concerned with $P_m$ and $P_n$, my total subjective state cannot be expressed by either of the following equations :

$$S \text{ (total state)} = P_m + P_n,$$

$$S = [E]^{P_m}_{t_m} + [E]^{P_n}_{t_n}.$$

If $\alpha$ be the nature as well as directed magnitude (vector quantity) of the feeling incidental to the transition from $P_m$ to $P_n$, then we have

$$S = [E]^{P_m}_{t_m} + \alpha + [E]^{P_n}_{t_n}.$$

Even this is, however, experience as represented in reflection : the summation and equation pertain to

my *idea* of experience and not to the given fact of consciousness. It will be profitable to sum up at this stage the results we have so far got regarding thought-displacement (or thought-oscillation which is a special and interesting form of it).

### 4. *Fact Quiescence.*

I have represented a given, direct experience, a perceptual fact, by the symbol $[e]^{P_n}_{t_n}$. It is a mass of single experience especially emphasised at the point or feature $P_n$ at the moment $t_n$. Clearly such a fact need not be confined to sense-experiences alone: the cloud I am looking at, the emotion that I may feel, or even the idea that I may conceive may all, under certain conditions, be direct experiences: an idea is an indirect experience in relation to an impression, but it is direct when our interest and reference do not go farther than the idea itself. Now, I wish to note the peculiar repose or quiescence of direct experience. Assuming this experience to be an experience of the *first order*—an assumption consisting with its description as fact-stuff—I may simplify the symbol as $e_1$. All thought starts from $e_1$, and has a tendency to culminate in $e_1$. Experience of the first order is the destiny and satisfaction of all mental life: conscious life is an endless striving after the actual and real. Ideas play between one impression and another: the flash of lightning passes from one cloud to another. Ideas press forward to materialize themselves, motives bid for and

are satisfied in their objects, problems hunt about for their solutions, and hopes and queries grope for their fulfilment. Now, what appears to distinguish $e_1$ from experiences of subsequent orders is mainly its calm and repose and their unrest and tension.

The repose and tension of a mental fact are simple feelings and matters for direct introspection: there is a fact which appears to be momentarily satisfied with itself; it may forthwith become a new centre of psychic disturbance, a new basis for mental elaboration; but for a moment it is a place where my regard pauses, and at least a considerable part of the stress and tension of mental life is removed. When I compare an idea with its impression, a hope with its fulfilment, a motive with its satisfaction, a question with its answer, I think I feel the repose and quiescence of one fact as distinguished from the stress and tension of another. Let me assume that there is a level or plane in mental life where all tensions vanish or become infinitely small: by 'tension' I refer to the peculiar agitation which characterizes an idea pressing for an impression--when the idea itself is the object of my regard, it *is* a quiescent fact—it is a distinct state of conscious disturbance. Let me assume also that all mental facts which are removed from this level of evanescent tensions, have tendencies to this level in the ratio of their distances from it. Thus if T be the tendency of a mental fact to the quiescent level, and R its distance from it, we have its tension expressed by the equation $T = f(R)$.

Now, what is the distance of a mental fact from the quiescent level? Suppose I have a bare consciousness of *this* or *that* without any further determination : a kind of awareness with which we are familiar and which is expressible only by such ejaculations as 'lo !'. In such awareness there is evidently a relaxation of tensions which is not ordinarily approached in normal experience ; perhaps the relaxation is still more complete in the space of time when I am *just* going to sleep, when I am in the interesting borderland between waking and sleeping, when most of the sense-impressions have vanished and dreams have not yet appeared ; a similar experience also possesses me when I am *just* going to be awake, in the twilight between the retreating night of sleep and the dawning day of wakefulness, when the cobweb of dreams has disappeared, and the solicitations of the external world are not yet answered. I shall not pause to enquire whether the removal of tensions in these experiences is absolutely complete or not, or whether the algebraic sum of the tensions is zero or not. In the sequel I shall have occasion to return to the absolute case or cases. Meanwhile, it is clear that in the experiences *immediately* preceding and succeeding sleep we have the nearest approximation—barring of course possible cases of still closer approximation in pathological and other abnormal experiences—to the state of absolute removal of tensions. Thus if we denote the experience of absolute relaxation, the hypothetical state, by the symbol $e_0$ or $e$ simply, these

last named states may be represented by $e_1$,—so that I now put a somewhat different construction on this symbol (I have used it recently for *any* given, direct experience). Next compare this $e_1$, with the bare consciousness of *this* or *that.* We miss in this the complete or almost complete relaxation of $e_1$. There is here indeed a minimum of determination; but even this slight determination of 'this' or 'that' certainly induces a distinct consciousness of tension: to determine consciousness or awareness by any mode or form whatever is to put a strain upon it. Should there be any such state as mere consciousness or pure awareness, without any determination, we might expect it to be a state of complete quiescence, a condition of no strain or tension. Put the slightest construction upon it, make it even a consciousness of bare *this* or *that*, and you introduce a feeling of strain or tension. Every determination or form makes experience a *directed* magnitude, a vector, if I may be permitted to say so: consciousness or attention assumes a direction, a special reference; and surely it is not possible to direct and refer in a special way without inducing a characteristic feeling of strain or tension. Whoever has attended has known this characteristic feeling: whether the conditions be physiological or psychological, the feeling is unmistakeable.

I may compare pure consciousness—if of course this is not mythical—and even $e_1$ to an equipotential surface of electrical distribution. There is no difference of potentials between any two points, A

and B, over this surface : it is a stretch of consciousness in which there is apparently no sensible diversity of features, no preference, no differential incidence of subjective regard. Like the equipotential surface, such consciousness is also quiescent. To have a flow over this surface, we must have a difference of potentials between any two points, A and B, represented by $V_A - V_B$ ; similarly, to have a reference, a direction, a movement of attention, I must have a determination or determinations in my total experience of the moment, in the given mass of consciousness. For this at least a single determination must be there : this will have a psychic potential higher than the rest of the mass —the whole mass is undoubtedly larger than the determination or determinations that may there be in it ; $[e]_{t_n}^{P_n}$ is larger than $P_n$ ; consciousness or attention—I am using the terms indifferently for the present—is evenly distributed when experience is homogeneous, without determination ; the result is repose and no tension ; if however the slightest stress or emphasis is laid on any point in the mass, its psychic homogeneity goes, and with it the impartial distribution of attention ; and there is induced a peculiar feeling of tendency, of direction and reference, briefly, a consciousness of commotion and disturbance which is the more pronounced the higher goes up the psychic potential (if I may use this suggestive expression) of a point in the mass relatively to the rest of the

mass. Pressure in Hydrostatics and temperature in Thermodynamics play the same part as Potential in Electricity ; we might therefore go in for this instructive analogy to the other sciences. All the same, to keep pace with the scientific conception of Potential, I may define my **Psychic Potential** thus :

It is the feeling of tension that would be experienced by the Subject in bringing an unit of attention (as attention is a variable quantity, or even a vector quantity, I may pertinently speak of an unit) from a state of experience where the potential is zero—or to avoid the word 'potential' in the definition-- from a pure consciousness of bare existence to the point, feature, or state whose potential we are defining.

I will devote a future section to this Psychic Potential. In the meanwhile, it is instructive to compare $c_1$ with subsequent phases of experience in point of repose and quiescence. Whenever experience is a directed magnitude, with a particular reference and determination, it is a consciousness of tendency and disturbance : this is a fundamental proposition of the science of experience which clear introspection ought to establish. Further : the more is an experience removed from the level of least or no tension—let us assume $c_1$ for the present to be such a level- the greater is the consciousness of tendency and disturbance accompanying it : this law does not apparently quite consist with the law of *inverse* square which governs the behaviour

of physical forces. Now, the varying order of disturbance is sufficiently clearly indicated in our normal experience. Thus : Taking the experience of *just* falling asleep and *just* awaking as the starting level of minimum of tension and disturbance, the bare consciousness of *this* or *that* comes next in descending order of quescence or ascending order of disturbance. Next comes any steady sense-experience, *e.g.*, my experience as I am gazing intently at the cloud. When experience involves continuous movement of regard, as when I am following with eye a moving object, or exploring a given field, or noting a changing feeling, it becomes farther removed from the state of quiescence, and shows of course greater disturbance and tension. A mental image or picture is on the whole an experience of still greater tension, though the fact is not quite apparent to reflection. Is an unsteady sense-experience like the one just described more quiescent than the calm, abiding image, for example, the image of the face of a departed friend ? Is the experience of an anxious, breathless chase more peaceful than the forming, settling image of a Sorting Demon in the brain of a Clerk Maxwell, or the image of the Ocean of primordial nebula in the mind of a Kant ?

A full discussion over this question I must now defer ; but I may be allowed to indicate that a direct experience, an experience bound up with the apprehension of reality, appears to possess, in spite of all commotion within itself, a character of

abiding quiescence to which no indirect, second-hand experience, not connected with the perception of reality, can lay claim, however calm and collected it may be within itself. As we shall see, it is the peculiar quiescence of the former which makes it a ready index of reality, and it is the peculiar unrest and tension of the latter which makes it an equally ready disclaimer of reality. I do not allude merely to the relative permanence and independence of the former—characters well recognisd in the science of Mind. However tranquil an aspect an idea may wear, it is secretly nervous and fatally moved by an yearning. Somehow I cannot close with an idea : it is perhaps too thin to sustain my interest : I must press forward to denser stuff. An idea carries with it a consciousness of something wanting, something that remains to be told and given. Like an echo and a shade it awakens in the mind an enquiry, an yearning after something more, and thus fills it with a consciousness of incompleteness and tension. An idea is a symbol that longs for its meaning in fact, a problem that awaits its solution in the verities of existence. This inward reference of an idea to something beyond itself, this fatal disposition of a thought to body itself forth, accounts for the note of tension which marks its appearance and permeats its history. On the other hand, however restive a perceptual fact may appear to be, it is certainly not haunted by this sense of dissatisfaction with its own birth-right, not moved by a tendency to a level of existence beyond its

own. A perception also may suggest an enquiry and present a problem: the answer and solution may have to be found through a long-drawn array of conjectures, ideas and theories; but a perception need not seek to justify its own existence; it is there in its own right, to hold its own against a whole world of ideas and theories that may seek to demolish it; one may require to enquire about its conditions and consequences, or even may have suspicions as to its objective truth—theories too have oftentimes dared to question and revise facts; but none the less, a perception is a consciousness of a *plane of existence*, final and secure, lays claim to a birth right which is unquestionably of the first order The perception itself may be a truth, or untruth, or half-truth; but its level of existence is final, nothing which is not of the same order of existence, or is believed to lead to and culminate in an experience of the same order is permitted to cross swords with it: perception is opposed, corrected, or upset by another perception, actual or possible. Its level is the level of decisiveness and quiescence: an idea may be true or false; it may be truer than a given perception; but its level of existence *as an idea*, its status, is not final and absolute. Perceptual status is absolute in the sense that it is there in its own right and need not refer to anything beyond itself for its bare existence. I am not satisfied with my idea as such, unless it be the special case of an idea being an end in itself; I am satisfied with my perception as such, unless it be the special case of a

perception which I propose to interrogate and study. The truth is that the perceptual level is essentially the level of satisfaction, consummation of both interest and motive. I need not dilate further on this distinction which, vital as it is in theory and practice, is patent to clear introspection. With this distintion in mind I can see readily how a moving perception is quieter than a standing idea : it is quiet and abiding in a sense in which an idea as such is not.

In later sections I shall have occasion to go deeper, if possible, to the foundations of this quiescent level, but in the meanwhile I wish to dispel the apparent ambiguity that has so far been allowed to gather round the words 'tension' and 'disturbance'. We all understand the peculiar tension and disturbance of an idea as compared with an impression : but when we compare one perception with another, as the consciousness of existence with no determination and reference with the consciousness of *this* or *that*, we know a feeling of tension which is not apparently of the same *kind* as what marks out an idea from an impression. Two perceptions belong to the same level of existence, and consequently to the same zone of quiescence and satisfaction, as perceptions, if not as truths. An idea and an impression, as we have just seen, do not belong to the same level. Now, the tension of an idea in relation to an impression, is incidental to this difference of level between them : there is tension because there is difference of potentials between the two.

But does a perception as perception carry reference to another perception as perception ? Does my experience of the cloud essentially require another experience as a support to rest on and as a destiny to tend to ? All the ideas of life are symbols that require to be translated into such facts of immediate experience : but what such facts themselves require to be translated into ? A stage finds its significance in the drama of real Life around it : but where is this drama itself to derive its significance from ? Is the tension of directed attention of the same kind as the tension of an idea to a fact, an enquiry to a result, a motive to an object ?

The world of sense may be merely the echo and suggestion of a Platonic Heaven of ideal archetypes: thus a sense-perception as a copy may have an essential reference to its ideal pattern : the truth that I see or hear may be but a fleeting shadow of the truth that lives eternally in pure thought. But the truth of pure thought is not an idea in the ordinary psychological sense, not a consciousness of mediateness and reference : like an idea it is not mediate between a fact and a fact and referring to both : like fact itself it is immediate and ultimate. Now, let me ask this : Does a truth of sense-perception differ from a truth of Platonic pure thought in level ? Does the latter truth carry with it a sense of greater depth, security and immediateness than the former ? I do not refer to their relative scientific values ; I refer to the psychological character of the belief which accompanies each apart

from any question as to the place of either among the verities of existence. To explain my meaning: In the dim twilight of the evening I mistake a rope, laid across my walk, for a snake. The rope-snake is an illusion : it is nowhere amid the verities. But so long as it is not challenged and found out, does not the rope-snake appear to possess a manner of existence at least as immediate and interesting as the tall trees with their cloaks of deepening gloom, he pale heaven awaiting in solemn suspense the rst message of a solitary star, and the lingering choes of a distant pastoral song? Apart from cientific values, one perception would thus appear o go as deeply home to us as another : perceptions is perceptions would appear to carry a belief of mmediateness and reality of the same order.

I shall enquire later on as to whether there may not be different orders or levels of *felt* immediateness and reality among perceptions themselves. Perhaps the belief of immediateness and reality, security and quiescence, apart from all scientific interests of comparison, classification and explanation, is not strictly uniform throughout the whole range of our perceptions : perhaps perceptions have intrinsic differences in this accompanying tone of belief: they may perhaps be ranged accordingly in different grades of felt and believed reality. I shall have occasion to point out the distinction between a logical gradation of belief in facts and a psyco-logical gradation of belief in them. Perhaps it will be possible to show in the sequel that

every perception of a determinate direction and form necessarily involves an ideal construction or structure, is a 'presentative-representative' complex : so that every normal perception is a mixed product and not pure perception at all : by 'pure perception' I mean the consciousness, if possible, of bare existence, with no determination and direction, not even the simplest determination of *this* or *that*: the level of conscious life where the potentia is zero or infinity, the plane of absolute quiescence and truth. Now, since every directed perception involves a representative element, presupposes the backing of a psychic disposition, I may pertinently say that it is not *exactly* on the same level with pure perception, or $e_1$ which comes nearest to it the level of quiescence is not the same : if $e_1$ is the level of *no* tension, the directed perception is the level of *some* tension. Suppose I call this latter perception $e_2$ ; since every $e_1$ is a 'presentative-representative' complex floating in a fluid of pure perception ( a conception to be explained and followed up later on ), it involves two distinct elements, the element of pure perception ( say, P) and an element of directed, determined feeling backed by psychic dispositions and involving a representative structure ( say, R,R'). In my perception of the cloud, for example, there is the pure consciousness of objective existence—I differentiate it here not of course on the assumption that this is not an abstraction—; there is the presentative feeling of colour, light and shade, and shape backed and

determined by psychic dispositions ; and there is the representative structure without which this experience would not be a perception of cloud at all. The experience of the moment is not indeed a *sum* of these elements ; but in analysis it will be presentable as as a sum. Thus : $e_2 = P + R + R'$, where R and R′ stand respectively for the presentative and representative elements in the given experience. Now, let us assume that the feeling of tension in P is zero, or $T_P = o$ ; then, since R is a directed and determined feeling it will have a positive tension, or in other words, $T_R = a$. This difference of tension between P and R is due at least to the direction and determination of attentive consciousness in R, if not to any difference of *level* etween them. But R′ is an *ideal* element besides eing a directed and determined one like R ; there- re the tension of R′ will be due partly to its pecial direction and determination and partly to s difference of level ( since an ideal element is not n the same level of existence as perceptual or resentative ) ; thus $T_{R'} = \acute{a} + b$. Hence the total ension of $e_2 = \overline{a + \acute{a}} + b$. Of the three components of he total tension, $a$ and $\acute{a}$ belong to the same kind, s both are due to special directions and determina- ions of consciousness ; the tension $b$ is of another ind, as it is due to the difference of level between R′ on the one hand and P and R on the other. It s the aggregate tension that is felt of course in ctual experience, but as this tension is a variable

quantity involving both direction and magnitude, i may quite naturally have components involving also both direction and magnitude: to say that when I feel the tension of $e_2$ it is equivalent to the feeling of three component tensions of two kinds, is no outrage on psychology: I do not of course feel the total tension as a synthesis or composition of tensions at all; but that need not prevent the total tension from having a composition and internal diversity.

The difficulty, however, seems to be this: Generally an idea is characterised by a peculiar feeling of tension because its level of existence, its potential, is not the same as that of an impression: the feeling of directed attention, the tension of the *a*-kind, may also be there in it. But when idea appears in the company of a perceptual feeling, when it is simply the representative element of the presentative-representative whole, does it not forsake its own level and share the status of the perceptual whole? Surely an idea loses its character as an idea when it supplements the presentative elements in my perception of the cloud; 'the touch of truth is the touch of life', and does not the touch of perception rob an idea of its restive and mediate nature, and make the representative structure of distance, solidity, flavour and taste of an apple which I see from a distance, assume the immediate and quiescent character of the colour, light and shade and surface which are alone perhaps presented to me? If so, *b*-tension is a mythical component in

the above equation $e_2 = a + \acute{a} + b$. By supposition, $b$ is a tension due to difference of level between R′ and R ; but if R″s association with R in the perceptual mass makes it kin, then there is no real difference of potential between them, and consequently, no resulting tension, $b$.

The sequel will show perhaps whether this difficulty is decisive or can be overcome. Here I will briefly say this. That the status of a presentative fact is not affected by the contribution of representative elements into its structure, is a proposition that does not appear to be strictly true. Apart from the element of pure perception, P, a given experience, $e_2$, is partly presentative and partly representative, is presentable in analysis as a sum of R and R′. When not in conjunction in the make-up of a fact-whole there is clearly a difference in level between R and R′ : they do not belong to the same order of facts. When however, they are associated in the same direct experience, does not the comparatively low calibre of R′ sensibly affect the pristine purity of R ? Does not R in adopting R′ into its fold and status compromise its own virile blood ? Let me take an extreme case first. The rope-snake of an illusion is also partly an immediate feeling and partly a supplementing idea : there is the direct impression of a black, thin, longish object, and there is also a supply of representative factors which must be there in order to dress up this object and make it appear a snake. Now, all is well so long as the experience is not suspected to

be an illusion : but what is the possiblity of its being suspected or known as an illusion at all ? The direct, presentative element, the black, thin, longish object is safe and trustworthy in all cases unless of course my eyes have played false : this at any rate does not run the risk of being upset, no matter whether a rope or a snake comes to be installed upon it : it endures as the immediately given datum, whatever structure may be raised or demolished over it. Some sort of construction must indeed be put upon it, in order that it may pass as a full-fledged reality : a mere black, thin, longish *surface* is not a concrete object where perception can pause : some sort of supplementing is evidently essential. Thus we have the following paradox The element which is necessary (R′) to make a concrete reality of an immediately given datum of feeling (R), is the very possibility of the insecurity and revision of the total experience ($e_2 = R + R'$) Remove R′ and you have a datum of immediate feeling absolutely safe and trustworthy, but no concrete object of perception ; contribute R′ and you have forthwith a concrete object of perception, but the native virility of the datum has been impaired, and there has appeared a possibility of the experience being challenged, corrected and contradicted ; it is the ideal structure that is thus liable to be challenged, corrected and contradicted ; the datum endures through all vicissitudes of fortune. The representative element, however essential, would thus appear to be an element of insecurity.

This is true more or less in all cases of normal experience. Now, the question is: Is there any lurking insecurity, or rather feeling of insecurity, while an experience is not being challenged or suspected by reason of the intermixture of presentative and representative elements in the whole? Logical insecurity is not the same as psychological or felt insecurity: it is evidently for unsophisticated introspection to say whether there is felt insecurity or not in a given experience. I myself feel there is a distinct weakening of the sense of security by the admixture of ideas with a given datum of feeling: the ideas keep up an appearance of security on the strength of the belief that they stand for *possible* feelings. Now *possible* feelings may well pull on with actual feelings, but it is nevertheless a far cry between them. Hence ideas as representing possible feelings may be admitted to the status of actual feelings in the total experience and share the general security of direct knowledge; but the suffrage of possible feelings is never exactly equivalent in experience to the suffrage of actual feelings; there cannot but be fall in the sense of security by reason of the intermixture of the actual and possible. And I submit that this fall is a fact of feeling. The equality of level between the presentative and representative elements in the given experience, $e_i$, would thus appear to be approximate rather than exact; hence, *b* in the above equation is not a fictitious tension.

There is another point which we should note in

passing. The 'presentative-representative' complex may come to exist in two ways: with the stress laid on the presentative half, in which case the experience will be perceptual; or with the stress laid on the representative half, in which case the experience will be conceptual or ideational. Even what is regarded as an idea is not there without a more or less strong presentative injection: pure idea like pure perception would appear as an abstraction. There is generally a large contribution of organic and particularly cephalic sensations, feeling of attention, in the make-up of what popularly passes as an idea: the idea is only a section of a total experience which may involve, besides the presentative elements just mentioned, even vague and confused sensations of objective sights, sounds and smells, which is also therefore a 'presentative-representative' complex with the characteristic that the subjective emphasis is here laid on the representative side. It would appear, however, that it is not merely the difference of emphasis that makes an impression an impression, and an idea an idea. A perception is accepted and necessarily accepted as a 'presentative-representative' complex: an idea is not; it is merely the idea while its setting in actual feelings is tacitly ignored. However that may be, the following general law will perhaps be admitted:

An idea gains in assurance by being associated with an immediate feeling in a mass of experience, though it gains by reducing the security of the

experience *such as it would possess if it consisted of actual feelings alone :* on the other hand, a feeling loses in vigour and assurance by being associated with an idea, particularly if the emphasis of subjective life is being laid on the *idea* for the time being. Briefly, there is always a clear difference of level between an impression and an idea, however they be mixed up with each other ; and this difference induces a feeling of tension in any experience in which they may co-exist.

So far I have been able to carry the order of quiescence only a very little way. I will devote the next section to a systematic study of the meaning of quiescence.

### 5. *Meaning of Quiescence.*

I define absolute quiescence as a state of consciousness of pure existence, with no special subjective direction and reference, with no difference of level and potential between one part of the experience and another. As I have hinted already, experience will show special subjective direction and reference if it assumes the least form or determination such as *this* or *that :* to have no difference of level or potential, experience must be strictly *homogeneous*, that is to say, must not involve the least ideal or representative structure. As it is one of the special objects of this essay to study this consciousness of absolute quiescence—the *Brahman* of the Upanishads—the Home of Final Truth—I will certainly not lightly dismiss it in the sequel :

but here I propose it rather as a mathematical possibility than as a veritable reality.

Absolute quiescence in mental life is *possible* in the consciousness of pure being: whether our consciousness is, or can be, ever actually a consciousness of *pure* being is another question. Let me use the notation Q for quiescence absolute. Whether this Q is or is not a positive experience for us we do not yet care to know: in normal life we have enough experience of relative quiescence—an idea that I will explain presently—to know what it is like: in defining Q however, whether absolute or relative, I have necessarily to indicate what it is *not*, I have to be content with a negative statement. While I am gazing at the cloud for some time my experience, apart from other elements, is partly a feeling of quiescence or repose, and partly one of tension or stress, if not actual displacement. When I am following with the eye a moving object, or noting even a rapidly changing feeling, a rushing train of ideas, my experience, apart from other elements, is partly also a feeling of pauses, and partly of course a feeling of stress and actual displacement: there must be fairly substantive, enduring parts even in a desparately rushing stream of consciousness—no matter whether we can bathe but once or more than once in the stream—in order that experience may be at all possible for us. We may have a feeling of transition between one substantive experience and another as James claims for us: but this certainly does not imply that we

have an immediate feeling of *mere* transition or change: experience is a whole which involves the consciousness of one substantive element A changing or passing on to another substantive element B: it is $[c]_B^A$, on the analogy of the previous notations, where A and B stand for the limits of the given experience. A in becoming B in experience must allow consciousness to pause and crystallize enough at some places of the flow in order that one may actually follow and know the process; every place where attention is allowed to stop and gather itself together becomes a relatively stable and substantive part of the mass of experience. Now, in the two concrete cases that I have taken, I mark this vital difference: The cloud of quiescent attention is not an experience of absolute quiescence; it involves both quiescence and stress; but the former element predominates and imparts its tone to the whole experience. The moving object or train of ideas also involves both the elements, but here the latter predominates and imparts its tone to the whole experience. Hence in both cases, quiescence and stress are *relative.* Denoting the element of stress by the notation S, or adopting the usual inverse notation, $Q^{-1}$, I may say that the experience of quiescence and stress in a given case is determined by the ratio $\frac{Q}{S}$. In defining the Q of an experience, however, I find that I cannot do it positively, but that I must do it in terms of the relative value

of its inverse, S, *i.e.*, the value of S as estimated by a certain standard of psychic disturbance—the standard by which we roughly feel and compare the stresses or tensions or displacements of several experiences. Thus supposing $\alpha$ to be such a standard of intuitive comparison, I may represent the S of a given experience by the equation $S = T\alpha$ ; so that in defining or describing the quiescence of the same experience I express it as though it were $(T\alpha)^{-1}$, though the quiescence like the stress is undoubtedly a matter of direct feeling.

### 6. *Experience as a Resultant.*

To the treatment of the ratio $\frac{Q}{S}$ I will return later. In the meanwhile, I have not adopted the Herbartian psychology of mutually helping and inhibiting presentations. Experience is an inexpressible unity in difference, and however forces may wrestle and match together behind the scenes, facts apparently come single on the stage to play their parts: the stamp of unity is unmistakeable even on the most chequered experiences of life: experience is never really a synthesis of presentations, it is *a* presentation always. In the foregoing paragraphs I may have treated feelings of tension as if they were complex feelings resulting from the composition of simple feelings; and a moment ago I was apparently considering the feeling of quiescence and stress in a given experience as if it were a feeling of quiescence *as compared with* a feeling

of stress. But this was not my meaning. A feeling may quite legi imately be treated as one that would result *if* certain feelings conspired in a certain manner: an actual resultant motion may conveniently be treated as if it were composed of two or more separate motions. In the latter case it is not necessary for an actually moving object to have all these component motions distributively: the skylark that soars in the sky like 'an unembodied joy whose race is just begun' flies in the resultant direction produced by its moving wings: waves dash and winds blow as Nature's forces conspire: the stars roll and the atoms flock together, part and dance as Nature's wholes, sums or resultants bid them. It is an elementary law of dynamics that when a number of forces act on a body, the acceleration (or change of velocity) due to each is the same in direction and magnitude as if the other forces had not been in action. So that every actual displacement can be analysed and studied as a result produced by certain elementary displacemnts (which can appropriately be represented by a system of vectors) due respectively to certain forces acting on the moving body: a diagram of displacements or vectors will clearly exhibit how the actual transference stands in relation to the forces that have been operating on the body.

In the former case, is an experience, a feeling, capable of such treatment? We have once for all committed ourselves to the view that experiences are one and simple in presentation : but can a

given experience be regarded as a resultant of certain component forces ? Is the unity and simplicity of an experience inconsistent with its having a resultant character ? I think, no. Herbart would regard an actual experience as the resultant of mutually aiding and inhibiting presentations, and the presentations are essentially spiritual, not material, activities. James would regard an experience as a result that follows as a whole, not piecemeal, upon a definite resultant cerebral action : each pulse of nerve agitation is not accompanied by an atom of feeling, and an actual experience is not the sum of a number of such atoms of feeling : the summation or composition is no mental affair at all : experience is a fact that follows as a whole upon a total cerebral fact : it is a *result* nevertheless though the component forces in this case are cerebral, not spiritual, activities. In general the following views may be taken as to the nature of a given experience :

(1) As a synthésis or sum of certain elementary actual feelings ;

(2) As a synthesis of certain subconscious or *quasi*-conscious feelings ;

(3) As a result that follows as a whole upon a total brain-state : no composition above the level of consciousness ;

(4) As a result produced by the concurrence of certain spiritual dispositions. But what are these spiritual dispositions ? Are they actual feelings or subconscious ideas ? Or do the dispositions

of the mind inhere in matter, and particularly in the brain ? Thus this view will be reducible to one of the three preceding views.

(5) As a resultant (synthetic) unity for conception or representation and as a simple (though differentiated) unity for intuition or presentation : I conceive my experience as a synthetic many, as a fact in consciousness that has resulted from the confluence of a number of simple, elementary feelings, *e.g.*, my experience of a tree ; on the other hand, immediate intuition or actual feeling possesses inalienably a character in which all logical categories are lost. It will be advisable here to develop a little this last view.

I define representative experience as an experience that makes an object in thought of another experience. Thus if $[e]^{P}_{t}$ is our symbol for a given immediate experience, its corresponding representative thought will be symbolised by a cumbrous notation like this : $\left\{E\right\}^{[\acute{e}]^{P}_{t_n}}_{t_m}$, where the index stands for the *thought* of the given experience. The interpretation of the symbol will be this : A representative experience is itself a presentative fact which is especially emphasised at the image or *idea* of a given experience ; as a fact of experience it is evidently larger than the image or idea of the given experience : when I am thinking of a tree my entire experience of the moment is not equi-

valent to the thought of the tree; again, my experience of the moment is undoubtedly a presentative or immediate fact, though its place of emphasis is an image or thought; lastly, in mental life it is the place of emphasis that really counts: in perception the point or aspect emphasised is usually taken as *the* perceptual fact, so also in conception, it is the ideal place of emphasis that makes the whole experience of the moment a representative one.

It should be observed further that in the last symbol there is a difference in time ($t$) between the whole experience and the part ($e$) which is embraced by it in thought. The experience-whole is ever a present fact; $e'$ is also synchronous with it: it is the emphasised part which makes the whole a whole; but $e$ is never a fact present along with E. Ordinarily, however, I shall denote a representative experience by the simpler symbol $E^{e'}$.

It is clear also that the index of the complete symbol may itself be a complex idea instead of a simple one. It may be the idea of a sum, series or configuration of facts. In fact, the peculiarity of a representative experience lies in this. Intuition may be a configuration or a series as regarded by the psychologist, but it is not a configuration or a series to itself; on the other hand, conception may, and often does, involve the thought of a configuration or a series: what is not possible in intuition becomes possible in representation: intuition is the level of absorption, idea is the level of excursion. To resort to notations again. In physical

science 'configuration' is an order in space, and 'series' is an order in time: I shall use the former term in a somewhat extended sense to mean co-existence of points or facts or features, whether in space or in thought. In this sense, we see, every determinate experience may be regarded as a configuration; but intuitive experience, though itself being a configuration, does not know itself as one such. It knows itself, appears to itself, as a configuration in representative thought: this is *contemplated* configuration. Now, this latter is essentially a sum of discrete elements. If e be a given experience-mass, an element of the experience may be represented by the usual notation $\delta e$ (I confine myself to the case in which the mass is of one kind throughout). The idea of this element will then be $\delta e'$—or, more correctly, $E^{\delta e'}$. Hence the idea of the configurated elements will be $S\,\delta e'$, where S stands for the operation of summation. If the constitution of the mass be not homogeneous, we shall have different elements such as $\delta e'_1$, $\delta e'_2$, $\delta e'_3$, and so on. The contemplated configuration will again be $S\delta e'$, where S stands for the same operation as before, $\delta e'$ serves as the type of the various elements. Therefore a representative experience which involves the thought of a configuration will be denoted by the symbol—$\{E\}^{S\,\delta e'}$. It should be noted, however, that the operation S is not a quite simple summation in all cases of ideation. Elements of ideas which are supposed to

constitute a complex idea are never quite like discrete, independent atoms: in massing together they influence the constitutions and tones of one another, so that the operation $\delta c'_1 + \delta c'_2$ is not the same as $\delta e'_2 + \delta e'_1$ : even the order of addition goes to determine the result of the process: order is essential in thought analysis and synthesis: the same is true in vector analysis, and indeed in all mathematical computations where the elements are processes and not simply statical numbers and space-determinations. Compare for a moment the mental rehearsal of a musical composition: how order seems to be the very soul of the thing! The mental recapitulation of the features of a tree does not appear to depend much on the order of representation, but the order is not certainly immaterial.

The illustration of a musical composition has taken us surreptitiously to the thought of a series. As in the case of configuration so in this case, the idea of a series must be carefully distinguished from a series of ideas. Every idea bears a twofold character as already indicated; it has reference to two distinct planes or levels of existence: the plane of the *given* and the plane of the *suggested.* I may also distinguish them as *categorical* and *conditional* planes. A fact that is, *is*: there can be no question or contingency about its bare *isness*: even the rope-snake of an illusion *is* in a distinct sense. A fact that is only thought of by me requires the fulfilment of certain conditions to become for me an

actual, given fact of the first kind. In Quaternions an operator $q$ is necessary for transforming a vector $\alpha$ into another vector $\beta$, so that we may have $q\alpha = \beta$. Similarly a certain operation is necessary for transforming a fact of the first plane or kind into a fact of the second plane or kind, that is to say, the idea of a fact into the perception of the fact. In our own symbols, $p\,\acute{e} = e$, where $p$ stands for the necessary operation which will realize $\acute{e}$ (the ideal part in representative experience) into $e$ (presentative experience). But it should be also observed that $E^{e'}$ is a presentative experience as well, and this in a different sense. Let us denote two corresponding presentative and representative experiences by $e_1$, and ${}_{E}\acute{e}_1$, respectively. Then the latter is representative so far as the reference is to the former; but as its symbolical constitution shows it is presentative as well, *viz.*, so far as the reference is to the *flow* of experiences in mental life: even an idea is a fact that has succeeded another fact in this flow, and though its precursor might have been of the stuff of which perceptions are made, the two belong to the same level of existence so long as the reference is to the flow of conscious life: as mere subjective states the rope-snake is as good as the Superdreadnaught. Nay, more; an idea does not lose its title to immediate existence in comparison with an impression *as such*, it is hollow, thin air only by the side of the corresponding impression and its family. The fall of an apple is a genuine fact, and

is determined by its proper assemblage of conditions, and has its place in the universal configuration and concatenation of phenomena; the *illusion* of a rope-snake is also a fact as genuine and has as assured a place in Nature's economy as the fall of the classical apple which has made the distant stars our kin. Thus an illusion and an idea are not merely subjective but *cosmic* facts: we call them hollow because we look to a part in them and ignore the whole: I have regarded them as conditional because certain operations must be gone through in order that their objects may be contradicted or realized—because, in short, my interest is pragmatic and not usually scientific. Suppose $f(e_1, c)$ represents a family of experiences (an idea to be developed later on), where $c$ is the parameter of the family—that is to say, it is constant for the same experience but different for different experiences, so that any particular member of the family may be specified by the particular value or meaning assigned to $c$. Then, $E^{e'_1}$ is representative and unsubstantial in comparison with $f(e_1, c)$, but it *is* presentative and substantial both in the subjective and cosmic series of facts, such as

$$\ldots + f_s(e_1, c) + f_s(e_2, a) + f_s(e_3, b) + \ldots$$

(1) Subjective series.

$$\ldots + f_k(e_1, c) + f_k(e_2, a) + f_k(e_3, b) + \ldots$$

(2) Cosmic series.

I have arranged the series in order of families.

Let me make a short appeal to reflection. Sup-

pose while I am lookiug at a cloud I am thinking of Shelley or Kalidas: does the thought of the poet appear unsubstantial by the side of the sense-perception? Not at all. So long as the idea is not challenged and referred to its object poet, there is no suspicion of unsubstantiality at all—indeed no question of actuality and hollowness is involved; the thought is taken to be as much a fact as the cloud; each is real. The hollowness of the thought appears only in reference to its object, *not* directly in reference to the cloud and other experiences. Even after the thought of hollowness has come, the idea of Shelley can be made to appear hollow by the side of the cloud only by subsuming the latter under the family of the former's object (the actual poet) or by extending the conception of the family so as to include the cloud and other sense-experiences. By such subsumption or extension what was a closed curve becomes a plane of infinite dimensions. I say this: My idea Shelley is unsubstantial by the side of the real Shelley and other objects intimately associated with Shelley (to which therefore my thought is carried in referring to the real poet, and which consequently may be roughly regarded as the *family* of the object); now, real Shelley belongs to the same order or plane of experience as the cloud now before me; Shelley and the cloud are in a sense akin; *ergo*, the idea Shelley is unsubstantial by the side of the cloud before me. Note the indirectness which marks this way of thinking. *Directly*, an idea is believed to be hollow only by

the side of its corresponding impression and those intimately bound up with it. The corresponding impression and its family is as it were a closed curve which after taking in the cloud and other objects of sense-experience becomes a plane of infinite extent, *viz.*, the plane of given, categorical experience——self-satisfied, quiescent fact. An idea is then believed to be hollow in reference to *this* plane. Now, look at this idea from the view-point of mental and cosmic life, and its hollowness goes. The scheme of the universe regarded as a configuration and concatenation of *phenomena* knows nothing of impostors: the wildest dream that man has ever dreamt has *occurred* with as good a title as any of the best attested events in the world's history: we dub it a phantom because we are pragmatic and would want it to serve a particular end, to do office for another order of occurrences; but we often forget that if a dream cannot be made to play the role of broad day-light experience, neither can the latter be an equivalent substitute for the former: each is real in its own place and way, and if in history dreams and theories have unceasingly pressed for their realization, the so-called realized *facts* have also often received their momentum and drawn their inspiration from the thin air and the cobweb.

In intuition proper there is no *thought* either of configuration or series: I must pull myself up now and then to perceive a given stretch of intuitive experience as a series of successive pulses of feeling:

in itself it is a continuity the nature of which is intuitively given but not logically presentable. It does not even think of itself as a continuity or a unity: there is no articulate thought of either. Intuition is dumb (**3**): I cannot think and talk of it without putting an ideal construction upon it, without projecting my own shadow into it: this appears to be the irrefragable truth in Kantianism: Understanding makes Nature.

When I think I am *having* a series of feelings, my experience is certainly a double affair. My consciousness seems to oscillate between two distinct planes in an experience of this kind——the intuitive plane and the ideal. Let me resort to symbols. Suppose an experience of the intuitive plane is represented by simple $e$, and an experience of the representative plane by $e'$ (not the entire experience which is $E^{c'}$). Suppose we express continuity by the notation $[E]_{e_n}^{e_1}$ which indicates that a given experience E is continuous between the limits $e_1$ and $e_n$: observe that in such experience there is no thought of series.

I propose to enlarge upon the idea of psychic-continuity in a more fitting place. In the meanwhile, I cannot pass on without calling attention to some of the salient features of this continuity. In the first place I wish to emphasise the fact that *experience, as we know it, is essentially continuous*: there are apparently no gaps in the flow of mental life. I cannot imagine a condition of my existence

in which I am absolutely without experience of *any* kind, a perfect' neutral zone in my life where one experience has ended but another has not yet begun. Life for me is always a life of experience of some sort: Life, like Nature, abhors vacuum——mental void, feeling-and-thought-nothingness. Let me distinguish such continuity of mental life as absolute: such continuity seems to pertain to the very essence of mental existence. Consciousness must continue, and continue even through states which have been unhappily described as 'unconscious': it is the only substance——I call it 'substance', James and his following notwithstanding——that refuses to be put out or limited by its own negation. This continuance which appears to be bound up with its essence, and is not subject to, and determined by, any reference external to itself, may properly be regarded as absolute. Where the reference is, however, to an object, condition, or agency external to itself, experience may be said to possess *relative* continuity. Of relative continuity I may notice here *three* important varieties. A given experience may be regarded as continuous with respect either to the level of intuition or to the level of ideation: while for some moments I am intently gazing at the cloud before me, without ever moving off into the realm of ideas, my experience for these moments is a perceptual continuum. Though perception may require the filling up and interpretation of the rude presentative framework by means of representative elements, a true perception

need not involve the actual shifting of the mind's stress from the 'given' to the 'recalled' half of the complex affair : however a perception may inform itself and grow, it does not allow, in a typical case, the emphasis of subjective regard to be transferred from itself: it is this circumstance which makes the 'recalled' or suggested elements——I am adopting for one moment the language of atomistic psychology——to share the immediate character of the 'given': the smell and the taste of an orange appear to be given as directly as the colour and shape which are alone perhaps presented to me as I am looking at it from a distance. Now, this is continuity of experience with respect to the plane of intuition. Similarly, experience may be continuous with respect to the plane of idea or thought also. An idea or thought is certainly not without its intuitive setting or background : it presupposes not only a previous intuition but is imbedded in a *present* intuition also. Symbolically the total experience of the moment when I am supposed to be occupied with an idea as distinguished from an impression is not $\acute{e}$ but $E^{e'}$. So that we have a paradox : The experience of an idea is not an idea itself; it is an intuition ; and in this sense, all experience is intuition. We call it an idea in accordance with a particular distribution of the subjective regard.

We may also speak of the continuity of a given experience with reference to the unity of the domi-

nant Interest, or what practically comes to the same thing, to the unity of the attentive effort put forth : an experience may be said to be continuous during the time the Subject has been actuated by *one* dominant interest, or while the attentive effort put forth by him has been one in a distinct sense. Observe that an experience continuous in this second sense may well be discontinuous in the first · a study of Shakespeare's Julius Cæsar may actually yield me a pretty long series of impressions and ideas, and may even be interrupted from time to time by a thousand and one knocks of a world which must ever grind and toil heedless of the bard's lyre and the martyr's thorny crown : but it is continuous in this sense that it has been inspired by a single guiding purpose and has been sustained by generally uniformly directed pulses of attentive effort. Lastly, I may perhaps pertinently speak of the continuity of an experience with reference to the unity of the object that is being experienced : experience is one in so far as its object is one : will not the last example of Julius Cæsar serve me here too ? I have purposely refrained from attempting a possible reduction of these three varieties of experience-continuity : do we require really more kinds or less ?

[I shall leave for the present this interesting topic of subjective continuity by indicating, if possible, a total or aggregate expression for my thought during, say, a part of this evening. For simplicity's sake, let me confine my experience for

this period exclusively to the level of thought or idea: I have been only thinking or meditating, and not seeing and doing (it must be admitted however that this is not a correct representation of the *fact*). Suppose the total experience to be denoted by E. Now, evidently, E has been determined by *three* conditions: by a guiding dominant interest $= x$, say; by its reference to a single, continuous object of thought $= y$, say; and by its reference to a single level of conscious existence, *viz.*, the level of thought, by supposition, $= z$, say. I shall not dilate here on the nature and extent of this triple determination, but shall simply admit the equation $E = \phi\ (x, y, z)$. Clearly also, $x$ or interest determines the experience within certain limits: thought is allowed to exercise and stretch itself within the bounds laid down by the interest in question: all thought outside these bounds is impertinent and promptly rejected; no thought appears to be satisfied or complete *with respect to* this interest which falls short of these proper bounds. Let us call the limits $a$ and $b$ respectively: every pertinent thought must *at least touch* the interest in question, and no pertinent thought must *move away* from it; and evidently, to simply touch an interest is not equivalent to not leaving it off, so that if the former act is $a$ and the latter $b$, $a$ is not $= b$. My thought has not only already touched but *pursued* an interest, exercised itself over it, before it can move away from it: explicit separation of thought from something presupposes a

previous engagement of thought with that thing . things must meet in order to part in thought. Thus I may propose as the lower limit of $x$ the threshold where a thought merely touches or bears upon it *without* actually pursuing it ; and as the upper limit of $x$ I may propose the line where a thought just leaves it or begins to move away from it *after* having pursued it. Given a stretch of experience, I can assign pretty accurately where a particular interest which has been operative begins and where it ends. I may also sensibly speak of the limits of the object of my evening's meditation. The unity and continuity of my object require the keeping of my thought within certain limits : no thought pertinent with respect to this object must fail to cross a given threshold and presume to transgress a given boundary : there is such a thing as thought-*minimum* with respect to this object as also such a thing as thought-*maximum* : thought in order to be pertinent must bear *at least* a certain character and direction, and must not overgrow a certain character and direction : I take here of course both 'character and direction' in their quantitative aspect. I cannot but leave my definitions of the limits extremely general for the present : let the limits of $y$ be $\alpha$ and $\beta$. Lastly, in order that my thought of this evening may keep sufficiently close to the level of *idea* only, my subjective emphasis, which is never strictly constant in a place in ordinary experience, must move *within* certain limits : never during the course of this rapt meditation must my

subjective emphasis leave the ideational level and settle on the perceptual. Thus, symbolically, if the stretch of meditation be $= E_1^{e'_1} + E_2^{e'_2} + E_3^{e'_3} + \ldots$ my emphasis must continue on the line of indices $(e'_1 + e'_2 + \ldots)$, and must not seriously be transferred to the line of bases $(E_1 + E_2 + \ldots)$. The emphasis, however, need not remain absolutely constant; it may, and indeed does, oscillate, but the limits of oscillation must be such that the experience of the moment shall retain its general psychic character—shall be a meditative thought generally. Let the limits of $z$ be $p$ and $q$. Then, I may perhaps find a total expression for my meditative thought of this evening thus:

$$E = \phi\,(x, y, z);$$

$\therefore$ The total expression for $E = \text{Lt. } S\,\phi\,(x, y, z)\ \Delta x\ \Delta y\ \Delta z = \int_a^b \int_\alpha^\beta \int_p^q \phi\,(x, y, z)\, dx\, dy\, dz.$

As usual, this expression stands for the result of the following operations: First integrate $\phi\,(x, y, z)$ or the experience in question with respect to $z$, considering $x$ and $y$ constant betwnen the limit $p$ and $q$; that is to say, first find an answer to the following question—*How much* experience have I on account of my subjective regard moving between limits $p$ and $q$, assuming that both the factors of interest and object remain constant? Suppose during the period it is only the subjective emphasis that has moved between the proper limits, but the interest has remained absolutely one and

statical, and so also has the object of my thought. As a concrete illustration I may take the following : For some moments my consciousness assumes the form of an image or idol ; I am not thinking about the idol, but am having a statical image or rather a feature of an image before my mind's eye——the thought is statical and not dynamical, if I may be permitted to use this familiar distinction in the present connexion. Now, in this example, the determining interest of my thought is absolutely one and statical——unlike the interest which has inspired the study of Julius Cæsar or what has directed the writing of the present essay (in the latter cases *the* interest is only a chief among a multitude of subordinate and co-ordinated interests.) The object also may be taken as absolutely one and statical, assuming of course that it is taken up by a single act of imagination. But though both $x$ and $y$ are constant, subjective emphasis is slightly dynamical——there is, as reflection will readily show I believe, a feeble play of regard between the two levels of intuition and ideation. We may, therefore, fairly enquire : How much *thought* of the idol has been there on the whole *on account of* this fluctuating movement of regard alone? Secondly, I have to integrate the result obtained with respect to $y$ between the limits $\alpha$ and $\beta$ considering $x$ as constant. Lastly, I must integrate this result with respect to $x$ between the limits $a$ and $b$. The interpretation of these two operations will be on lines similar to those of the first. For the purpose

of such summation it is not necessary that the limits of the three operations should be altogether independent of the variables: the limits of $z$ may be functions of both $x$ and $y$; and the limits of $y$ may be functions of $z$. Here too the psychological interpretation will be readily forthcoming. For instance, the limits of the unity of an object for experience may be functions of the Subject's interest in relation to it: the object is one *in so far as* my interest is one.]

This attempt to find a total expression for a given experience, involving as it does the conceptions of psychic continuity and limits, has been perhaps a little enlightening while we are about the form of experience $[E]_{e_n}^{e_1}$: an experience which is continuous between the limits $e_1$ and $e_n$. Suppose such an experience be represented by $S_O$, a notation which I am about to explain. Let us also grant that the continuity in $S_O$ is a continuity with respect to intuition: the experience is a stretch of intuitive consciousness without any interpolation of ideas, *e.g.*, I am being treated to a music and am absorbed by it for a few moments: for these few moments my subjective emphasis settles on the plane of the given, and does not play between what is actually given and what may be suggested by it—the associated ideas and memories, for instance. The continuity of $S_O$ refers, therefore, to the circumstance that the emphasis of subjective

regard *continues* to move like a particle on the level of the given, without ever leaving it, that I am for the time being too full of the actual and immediate to sally forth into the domain of the ideal and remote. Let, thus, $S_0 = [E]_{e_n}^{e_1}$. We observe that $S_0$ is a *nascent* series, if I may be permitted to so characterise it. It involves no thought of series, no thought of time relations. While for some moments I have listened to a music and have been full of it, my experience has certainly not seemed to me a series, and no thought has been disengaged for these moments to contemplate, define, and if I may add, to idealize the experience. The experience is a *single* stretch of intuitive consciousness, with no palpable breaks of intuitive continuity. We may also observe that it possesses a peculiar but distinct character of quiescence, though here in the given plane of intuitive consciousness there has evidently been a continuous *displacement* of subjective regard between the limits given above. Notes have thrilled, swelled and melted away in echoes, and my experience which has grasped all and enjoyed all must have essentially been an experience of displacement; but it is quiescent in the sense in which an intuitive experience is quiescent, and it is so in a somewhat stronger key: by supposition there has been no movement of regard, no oscillation of emphasis between the subject enjoying and the object enjoyed, and no wavering between the given

song and its suggestions: my regard has quietly reposed on the object and on the plane of the object.

Thus if the relative quiescence of the present experience be determined by the ratio $\frac{Q}{S}$, we can roughly comprehend the magnitude of Q from these considerations: Suppose $\alpha$, $\beta$, $\gamma$ are the three components or factors of the stress of a given experience, and hence let us suppose that $S = \alpha + \beta + \gamma$. The stress of an experience is partly determined by the following question: It is intuitive or ideational? Let this determinant be $\alpha$. Is it also partly determined by the following: Does the experience involve movement or oscillation of regard between the objective aspect of the experience-whole and the Subject, and if so, how much? Let this determinant be $\beta$. Lastly, it is partly determined by this: Does the experience as it continues involve movement or oscillation of regard between the planes of intuition and idea—am I having as I proceed a stretch of pure intuitive experience or a mixture of intuitive pulses and ideal *projections?* And if so, how much? Let this determinant be $\gamma$. Now, from the ratio $\frac{Q}{S}$ we see at once that the relative quiescence of an experience $\left(=\frac{Q}{S}\right)$ will in magnitude be inversely proportional to S or to $\alpha+\beta+\gamma$. If S be zero, the quiescence of an experience is infinite: *an experience of absolutely no stress is an experience of infinite quiescence.* In all

normal experiences, however, S cannot be made to vanish altogether, though it can be reduced to a minimum : no experience is without stress which is an experience of *directed* attention, which, in other words, takes on any determination whatever. In our example we may assume both $\beta$ and $\gamma$ to vanish, for apparently there is no play of regard between the subject and the object, and between the plane of the given and that of the suggested. But can $\alpha$, the determinant of the relative quiescence of a stretch of intuitive consciousness, be supposed to vanish ? No. My intuitive absorption in the song not only involves directed attention but even continuous displacement of attention : hence $\alpha$ is a positive quantity and not zero. But nevertheless relative quiescence $\left(i.\ e.\ \frac{Q}{S}\right)$ in this case has a greater magnitude than in the case where all the three components of S are positive quantities.

I have essayed to study a given stretch of intuitive experience. It can aptly be represented by $S_0$ with the meaning attached to it as above. But this will not be a suitable notation when I want to represent this fact : I think I am having a flow of experience—when I am listening to a song and am representing my experience to myself as a series. Here I have first $S_0$ or a stretch of intuitive experience in which my whole conscious existence is for a moment merged. But presently I wake myself up, as it were, from this intuitive trance of absorption and enjoyment, and contemplate the

fact that had just ended : no such contemplation is possible alongside of the intuitive trance, I cannot feel and contemplate the feeling at one and the same time. In order that such thinking may be possible I must take consciousness a little aside, I must shift my emphasis of regard from the feeling to something which is not *co-planar* with it. Any one who has heard a song and while hearing mused over it, enjoyed a scene and while enjoying brooded over it, will readily see what co-planar experiences are like. Such a shifting of subjective emphasis means, according to our conceptions of Psychic continuity, discontinuity in experience. It is a discontinuity arising from the *projection* of an experience of one plane upon another : it may be instructive here to recall the analogy of projection in Geometry. Thus after having a stretch of intuitive experience I draw myself up to contemplate what the just expired fact in me has been. I may write down the following two equations as representing these two acts or states of my consciousness :

$$S_0^1 = [E]_{e_n}^{e_1} \ldots\ldots\ldots\ldots (1).$$

$$S_1 = [E]\left\{[E']_{e_n}^{e_1} = e_1 + e_2 + \ldots\ldots + e_n.\right\} \ldots\ldots (2).$$

This latter experience is a presentative experience with a representative index. All experience, if taken in its entireness, is presentative. Even the wildest dream and the haziest idea live and are imbedded in warm, actual experiences : the experi-

ence which involves the dream or the idea cannot be a dream or an idea itself: the merest fictions are not *thus* without their foundations in facts. The base of any experience is necessarily E or immediate feeling, whatever the index may be: this permanent basis of life and experience is necessarily without the ideal accent—it is E simply and not E′. *Intuition is an inalienable datum of life* (4).

In order that my consciousness may be $S_1$, there must be, as we have seen, break of continuity after $S_0$. But this discontinuity does not clearly affect the absolute continuity of mental life, nor even really what I have described as intuitive continuity or continuity with respect to the intuitive plane, if we remember that intuition is an inalienable basis of conscious life and that all experiences are, in a distinct sense, co-planar inasmuch as all experiences must live and flow in a permanent *plenum* of immediate consciousness. The discontinuity therefore affects the continuity of interest, or attention, or subjective emphasis. In passing from $S_0$ to $S_1$ clear, emphatic consciousness has moved off from the level of the given to that of the suggested: while the music surging before me has become confused and feeble an idea or recollection perhaps has become prominent and insistent: while the scene on which my soul was feasting has become stale and blurred the stealthy advance of a memory or a hope has made the chords of my consciousness thrill in over

whelming response. This indeed is one of the commonest incidents of conscious life: this shifting of light and shade to and fro between intuition and idea, this playing of life's accent between the actual and the ideal. Life is unmeaning without this play: the echoes wake and centre and reassure themselves in the song, the song softens, delivers, fulfils itself in the echoes. Shall I call this **Lateral discontinuity** in experience?

Now, what after this? My soul presently returns to the feast it left unfinished—after musing a little while aside, I again come to have a stretch of intuitive experience of the nature of $S_0$. All the remarks which we thought it proper to make in regard to that ($S_0$) will apply to this: it is a single, undivided mass of conscious existence, with my subjective emphasis bound to the level of the given, with my life and reality staring each other in the face, and not sulking and musing aside. Thus I have a third phenomenon—

$$S_0^2 = [E]_{e_r}^{e_m} \ldots\ldots\ldots\ldots\ldots\ldots\ldots (3).$$

It is an experience continuous between the limits $e_m$ and $e_r$ with respect to the level of intuition and incidence of emphasis. I do not suggest that this experience——the base E and the limits are altogether independent of the previous two stretches of experience, $S_0^1$ and $S_1$. Nevertheless this *is* a new phenomenon: the sequel will show how in normal life we can have neither an absolutely independent nor an absolutely new phenomenon.

But presently I wake up from this new dose of intuitive absorption, become eccentric so to say and slide into a fresh mood of representative thought. Feeling partly withdraws and thought largely possesses me : the music again has become a sort of agreeable noise, I am moving again amid the shades of the departed or the looming visions of the unborn. Without such recurring lapses into reviewing moods and foreshadowing abstractions, my experience of the song, though in itself a continuous series perhaps, would not be presentable to myself as one. Feeling as feeling is self-sufficient it delivers itself immediately. Feeling is *not* self-sufficient as constructive knowledge. In order that I may have constructive knowledge or knowledge *in relation to a system*, knowledge with reference to an order, I must somehow raise myself above pure feeling and regard it from aside : for this it is not of course necessary that I should cease to feel ——which is impossible——but that I should *think more and feel less*. Experience is a curve with two principal foci, if I may say so : the focus of presentative emphasis or concentration and the focus of representative emphasis or concentration. Clear, illuminating consciousness plays between these two foci : now it is warm feeling with a slight fringe of thought perhaps, and then it is brightening thought, retrospective or prospective, with a shy residuum of retreating feeling.

Let this fresh mood of abstraction be represented by the notation—

$$S_2 = [E] \left\{ [e']_{e_r}^{e_m} = e_m + \dots\dots + e_r \right\} \dots\dots\dots\dots (4)$$

It is the representation of a previous stretch of intuitive consciousness as a series: it is a present fact which judges and interprets a past fact. The above presentation of the present fact is not strictly accurate, however. The actual complexity of the fact has not been fully unravelled: I have considerably minced matters. The present not only resolves, judges and interprets the past, but also anticipates more or less dimly the future. In listening to a song and musing aside a while I not only rehearse the experience that I have just enjoyed, but vaguely expect a further stretch of similar experience: this is generally the case unless I am positively aware that the tale has been all told. Suppose I represent continuity between a past fact and a future by the following notation—

$$e_r \leadsto e_{x-r}, \; or, \; \bar{e}_r \quad \overline{\qquad e_{x-r}}$$

which means that I conceive or rehearse a past stretch of experience as a series up to the $r$ term where the past fact actually ended for me and I slided into a mood of reviewing abstraction, and I expect that experience to be continued down through the remaining $(x-r)$ terms. While I am just at the threshold of an unfamiliar song, my attitude is certainly one of wondering expectation: the magnitude of the series of the experience about to begin——I necessarily anticipate it as a series, though immediately it is only a stretch——is

simply $x$: I wonder how long the experience will last and how many pulses of substantive feeling it will mean for me. I begin if possible with a *tabula rasa*, and lie wondering in wait for each successive wave of feeling as it comes and dashes past me, each being a new addition to, and a new subtraction from, the retrospective and prospective sides respectively of the curve of continuity. The past grows at the expense of the future: fact realizes itself by the slow decay of possibility and expectation. In the above curve of continuity, the left-hand side stands for retrospective thought while the right-hand stands for prospective. Thus when I think that any—I know not what—song is *just* to begin, my experience, according to the above notation is— $\overline{e_0 \qquad e_x}$.

Successively I have—as I proceed to listen to it and mentally take stock of it from time to time,—experiences involving continuities like these—

$$\overline{e_1 \qquad e_{x-1}}$$

$$\overline{e_r \qquad e_{x-r}}$$

$$\overline{e_X \qquad e_0}.$$

The large X of the last continuity shows that it is no longer a vaguely expected magnitude but a realized magnitude which I now conceive. It is thought of the continuity of a song which has *just* ended. I will not now dilate further on continuity; but it is clear that this notion of continuity has an undeniable place in the reviewing or judging facts

$S_1$ and $S_2$. In reviewing $[e]_{e_r}^{e_m}$ or the stretch of previous experience continuous between the limits $e_m$ and $e_r$, I not only represent it as a series, *viz.*, $e_m + \ldots\ldots\ldots + e_r$ as shown in the $S_2$ equation (4), but as a past series *to be followed by* a future series of perhaps indefinite magnitude. This introduces a new element of complexity in the above equations for $S_1$ and $S_2$. However, in the light of the foregoing explanation, I may for the present substitute the following (using as before the simpler and feasible modification of the curve of continuity).

$$S_1 = [E] \left\{ \overline{(e'^1_n = S_n) + S_{x-n}} \right\},$$

where E is the inalienable intuitive base, $\acute{e}^1_n$ is the thought of a stretch of past experience continuous between $e_1$ and $e_n$, $S_n$ is the representation of this last as series of a certain terms, $S_{x-n}$ is the thought of the expected series to follow, the dash overhead shows continuity.

I have now studied at some length the type of experience which is illustrated by a fact like this——I think I am having a series of feelings: I am listening to a music perhaps and am presenting my experience to myself a series. There are three important things to note: (1) essential intuitive continuity of experience, but lateral discontinuity, involving oscillation of clearest consciousness between the potential intuitive series ($S_0$ etc.) and actual represented series ($S_1$ etc.) (2) The series, however, lives not in the entire

experience of the moment——the judging and representing thought being not itself a series——but in the index, in the snug little ideal world imbedded in the whole experience of the moment: Configuration and series, actually known as such, are ideal and not presentative features of experience. My notations have made this important point unmistakeably clear. The base, background or setting of every experience is necessarily E or intuitive consciousness: to avoid possible ambiguities let me call this inseparable element of all conscious life, this permanent substratum of immediate feeling, **thought-basis** or **thought-datum**. All conception or representative thought again is dependent upon this datum: pure conception or mere dream is a myth: and though ideas may be infinitely various they must constitute the index and superstructure of consciousness and not its foundation and basis. I may be permitted to call this element of experience **thought-index**.

(3) It will also appear that the unity of experience is primary and not derivative or resultant. But primary for what?——For intuition. An experience as it is actually lived is one and not many, not in itself a presented configuration or a series. Pure intuitive fact is inscrutable. There can be no science of pure intuition. Intuition is the level of satisfaction and absorption (**5**): so long as I am in it, I am not distinguishable from it; but science needs start with analysis and abstraction. Intuition, however, may well be a resultant of forces

wrestling below the threshold of consciousness ; but in any case it does not know itself as a resultant, a 'synthetic manifold'. To know it as a configuration, a series, or a resultant I must take consciousness a little aside as it were, allow my feeling to cool and shrink, and have what I have just called thought-index. Thus fact is a resultant only for conception : the index may well contain within itself a world of wonders, a veritable universe such as Green might look upon as a vast tissue of relations. Beneath the index flows the permanent substratum of inscrutable existence, infinitely rich in the variety and tone of its presentations, but hopelessly unaccommodating to Philosophy. But psychology, which must be representative or nothing at all, must either draw away and take to pieces things or completely disavow itself, may pertinently talk about the components of experience and their bearings just as dynamics may talk about the components of a physical force and directions and magnitudes The concrete physical motion as it takes place in Nature is a unity and not a composition though of course it may be conceived and known as a composition. The concrete mental fact is one and not a synthesis though of course it may be conceived and known as a synthesis. It is to be distinctly understood that such components of the fact which exist necessarily for thought are not concrete feelings themselves, but are what I may call **feeling sections** or features of an experience regarded *as though* they were

experiences themselves. For example, the feeling of stress which may accompany a given consciousness, is a simple, undivided feeling of a certain kind involving no explicit comparison, no clear ratio; but so remaining it is mute and, I may say, alogical. But thought must question and measure the facts that come to it: in this anxiety and capacity of thought is contained all the promise and possibility of science. A feeling of stress may be regarded by my thought as if it were a resultant compounded of the stresses $\alpha$, $\beta$ and $\gamma$, and bore a ratio to a certain standard of quiescence. Thought's constructions are certainly not arbitrary and fantastic, but these are none the less superimposed on the data of feeling where in the light of simple intuition they do not appear to press themselves into evidence. Relentless radical empiricism will gag philosophy. But while Life glides in speechless awe, the waves of thought waking merrily in the breath of Heaven make of it a chequered and noisy play!

### 7. *General Nature of Fact-operations.*

I have perhaps now somewhat prepared the ground for a philosophical definition of Fact. A Fact is an entire, concrete experience, including what I have called the base and the index of thought, necessarily intuitive, possessing therefore an essential tone of quiescence or satisfaction, involving no explicit thought either of configuration or of series and also no logical opposition of

Subject and Object : it is concretely given, absorbing, dumb, alogical. This absolute, entire experience I shall henceforth denote by the symbol F. Now, it must have been abundantly clear from foregoing considerations that $F = E^{ef(x)}$, where the base stands for the inalienable intuitive datum and the index gives a general form (as I am going to explain presently) of the representative structure which may be put upon the datum. Do my base and index correspond, by the bye, to Kantian 'matter' and 'form' of experience? I shall not here pause for a reply. There are two points involved in this definition of Fact which are of immense philosophical importance :

(*a*) There is no fact which is not a form or mode of experience, which is an entity or process existing outside of consciousness. The so-called objective fact is *believed by me* to exist independently of my consciousness, though it cannot be known otherwise than as I perceive it and think of it, and though it appears scrupulously to stand or fall with my thought of it. But is this *belief* of the object's independence which is to prove its objectivity a fact outside or inside of my experience? Surely the mental fact that I believe an object to exist out of my mind cannot *really make it exist out of my mind.* Yet this does not reduce us to Solipsism. The definition makes it quite clear that the logical distinction of Subject and Object is altogether foreign to the constitution of the Fact. Subjectivity or objectivity is only an

accident, however fruitful and momentous, of concrete experience, and does not belong to its native structure. Experience for me is not always bound to be, and even ordinarily is not, *my* experience or experience actually involving the consciousness of me: the distinction of me and not-me is oftner lost than not in the normal experiences of life. As I have hinted before, to bring out this duality in thought, there must be oscillation of regard between the two, so that concrete experience is ordinarily monovalent, if I may say so. Thus it comes to this: It is psychologically incorrect to say, as we are commonly apt to say, that a given experience is *mine*, as though *me* were the inalienable datum upon which experiences waxed and waned; it would be nearer truth to say, though usage will laugh at this way of putting things, about *the me of a given experience.* The *me* is simply a very much imposing and interesting feature in the concrete fulness of a given experience, and is by no means an absolutely inseparable feature. Let me resort to symbols for a moment. I have indicated the fact-index to be of the general form $ef(x)$, where the form of the function is unknown. When experience involves an explicit thought of Subject and Object, the index assumes a definite form to that extent. Suppose *me* $= s$, not-*me* $= o$, and the remainder of the representative structure —— I call it broadly representative structure for the present —— of the given experience $= r$. Then,

the experience in question may be represented by $E^{ef(s,\, o,\, r)}$. Hence it is clear the whole experience cannot be fastened on either *s* or *o*; or as I have put it, it is experience that owns me and not *me* that owns experience. So the suspicion of solipsism melts away.

(*b*) It will also appear that what we commonly call a physical or a mental fact is only a section of the concrete Fact as I have defined it. A physical fact, *e.g.*, the fall of an apple, will differ from a mental fact, *e.g.*, the thought of gravitation in my mind, in the mode and tone of experiences which they respectively induce in me. Both are experiences, though the former includes a belief that the fact is something else than the experience which knows it: they are however not experiences which, while being both intuitive in their concrete fulness, are of the same kind. Clearly, in the two cases the intuitive bases, the substrata of immediate feeling induced, differ. The indices also differ undoubtedly. Now, assuming that belief in the objectivity or subjectivity of a thing belongs to the index, I may distinguish the two facts as $E_a^{ef(\alpha,\, r)}$ and $E_b^{ef(\beta,\, r')}$, where the intuitive bases have been shown to be different, $\alpha$ and $\beta$ stand for the different beliefs in the two cases, and $r$ and $r'$ for the remainders of the representative indices. I do not mean to suggest that the two facts are respectively taken as objective and subjective *because*

of the $\alpha$ and $\beta$ which severally attaches to them—— that would be explaining the belief in objectivity or subjectivity by itself; possibly $\alpha$ and $\beta$ are functions of $a$ and $b$ which characterize the bases ——and, for aught we know, $r$ and $r'$ may also have a hand in the making of $\alpha$ and $\beta$ ——; the facts are labelled as objective and subjective *because* the substrata of immediate feeling in the two cases are materially different, and also perhaps *because* the element of the suggested in the one case (the one index) is materially different from that in the other case (the other index). In the light of these last remarks I have

$$F_1 = E_a^{ef}[\phi(a, r), r],\ F_2 = E_b^{ef}[\phi(b, r'), r'].$$

I now pass on to a fuller consideration of the base and index of fact. In the first place, the base and the index are not at all distinguished in intuition. Here thought and feeling are fused together —— I do not at all discriminate the given from the suggested, the presented from the re-presented —— and experience is certainly an undivided organic mass. I have called this F. In the second place, I have what I may call the reviewing or judging fact —— F′. The reviewing fact is also a complete and concrete fact, though this and the fact reviewed or judged are necessarily different. Now, this reviewing fact may assume the form $E_\beta^i$, involving a recognition of the base element ($\beta$) and the index-element ($i$). It is a fact

that knows another as dual in composition, as either an idea or thought imbedded in a substratum of immediate feeling, or as a mass of immediate feeling taking on an ideal or representative superstructure: thus the emphasis may be on the thought-element or on the feeling-element: the fact is taken either as $E^{\acute{i}}_{\beta}$ or as $E^{i}_{\beta'}$, where I have expressed emphasis by an accent. In either case, the experience knows another as one element *plus* another, as thought *and* feeling, as a presentative-representative complex. Let us briefly notice the four different cases in which F′ may appear:

Case I. Sense-experience: a picture, a song. Here the reviewing experience recongnises of course an immediately given substratum of feeling, that is to say, an element quiescent and self-sufficient—not necessarily and intrinsically bearing a reference to something beyond itself. This is the base, β′, clearly accentuated. But F′ also recognises that the picture or the song as it exists for it is not complete or even significant without the fusion of a suggested factor: the picture is a picture only with an ideal structure put upon the given touches of colour and shade; the song is a song only with the suggestive echoes which the tunes and breaks as caught by the ear awaken in the listener's mind. In the original fact F itself there was undoubtedly a confusion of these two elements, the given and the suggested; for F also was a significant picture or an appreciated

song. But there was no discriminative recognition of the two elements in F as there is in F′. F is characterised by elementary, intuitive homogeneity so long as F lasts and I am completely merged in it, the picture and the song, with all their feelings and suggestions, appear as *all* given: the significance of the given touches of colour and shade, the interpretation of the heard tunes and breaks is not gathered but found: there is as yet no thought of composition, there is only enjoyment and satisfaction.

Case II. Illusion: a rope-snake. When in the dim twilight a rope is mistaken for a snake, the concrete experience of the moment is undoubtedly F with all the characteristics that have been found in it. Even an illusion is a fact. The next pulse of experience which knows and judges the rope snake as an illusion is also in its concrete fulness a fact, and ought to be denoted by F′. Clearly, in order that the illusion may be exposed, my thought must discriminate between what is immediately given, *e.g.*, a thin, black, longish object, and what is suggested and imposed, *e.g.*, life and other characteristic properties of the snake. In the original F there was no such discrimination: experience was all warm and self-satisfied. The duality of base and index necessarily emerges in the judging fact which, in the case of an illusion, not only distinguishes between them, but objectifies the one and regards the other as existing nowhere except in the imagination. The base of the fact F

consists of two elements: the experience of the thin black, longish object, and the emotional and organic feelings which gather round that experience. When F changes into F′, the former element of the base remains practically unchanged, but the latter element changes considerably: the emotion that possesses and pervades me when I am in the midst of an interesting hallucination not yet found out, cannot retain its ring of reality and earnestness when in a later pulse of experience the illusion is judged as such, or even when I can afford to be sufficiently cool and collected to look at a fact from aside, to be psychologically fit for stock-taking. The emotional basis of life is exceedingly unstable and volatile: not only does the emotional ring of a fact differ from that of a fiction, or rather, what is believed to be a fiction, but emotion commonly withdraws and cools considerably when its factual basis—the experience which it accompanies and tones—is being reviewed and scrutinized. Let us call thess two elements of the base C and V—constant and variable respectively. Thus while V changes from F to F′ and from F′ to F″, etc., C practically endures through all such vicissitudes of elaboration. Now, what about the index? The rope is a fact while the snake is a fiction. But the mere cognitive base of the experience—a thin, black, longish surface—would make neither a rope nor a snake. An index, an element of the suggested, is necessary to make the given sensation a fully endowed object. But the index that would dress

up the given sensation into a snake cannot be the same as that would make it a rope; the V-part of the bases of the two experiences cannot also evidently be the same. Hence we are in a position to understand the following relations:

The reviewing fact which knows a rope and distinguishes between what is actually given and what is suggested and imposed $= F'_r = E^i_{\beta = C+V}$.

The reviewing fact which knows a rope-snake to be an illusion $= F'_s = E^I_{\gamma = C+V'}$. *r*, *s* are the distinguishing marks which indicate that the former refers to rope and the latter to snake. It is to be noted that a so-called fact differs from a so-called fiction mainly on account of their characteristic indices. In $F_s$ which is later found to be an illusion there is I intead of *i*. The v-parts are also different, but then it has to be observed that most of the emotional ring of a fact is an effect, a function, of its index: there is induced an emotion in me partly because of C but largely because of the suggestive halo, the lustre and meaning, which is allowed to gather round a given substratum of feeling. Generally, I may say therefore, that an error in perception such as the illusion of rope-snake arises from a *substitution of a wrong but more or less closely associated index and then objectification:* it would indeed be begging the question to offer this as a definition and explanation of

error, but perhaps this may be safely allowed as a specific statement of error.

Case III. An immediate feeling of pleasure or pain. The actual experience is again F which later becomes in my review F′. This latter, by supposition, involves a recognition of a base and an index, a discrimation of what is immediately given from what is suggested. The base is clear, but what is the index? No feeling ever appears in the mind as a solitary wayfarer to which the entire universe of mind is alien and apathetic. There are always dispositions and memories of past feelings to which the new-comer is more or less akin, and this makes every present feeling receive an impress and tone from the past acts of the drama of life, induces it to possess a romance, an interest, an import which no merely passing, unclaimed and isolated feeling could possess. The soul can never cry in the wilderness: unseen and unsuspected echoes linger and hover like angels on wings to hail, encourage and inspire every voice that is born amid the profound awe and grim earnestness of creation: feeling is the cry of the soul and it never comes without a context to usher and back it, without a store of ready suggestions to feed and fulfil it. Every present feeling of pleasure, like every present cognitive fact, is the last word the soul utters in its life's discourse, so that it can have no significance without all that has gone before it. Thus it becomes possible to discriminate the base of a pleasurable or painful feeling from the index, between what I

have now on account of the normal influence of the existing stimulus, and what I have on account of the lingering influence of past stimuli. It is no doubt possible to broadly distinguish the streams of the given and tributaries of the suggested in the slow process of feelings such as the charm of a landscape, the delight of a song, or the romance of a primrose: in surging and rushing feelings too a like discrimination is possible. Two things are also to be observed in this connexion: The stress of the base and the index in feeling-facts is much more lively and apparent than in cognitive-facts. How profoundly is a given substratum of pleasure or pain changed by the contributions of memories and suggestions! Again, we do not commonly recognise here any particularly durable part (C) in the base as we could do in cognitive facts.

Such splitting up of a mass of feeling into base and index is, it is needless to remind, conceptual. The whole experience F′ which involves such an analysls and judgment of feeling, is itself a concrete fact. The experience that analyses and judges is not itself analysed and judged thereby: no self-analysis and self-criticism are possible in the life of the mind. An operation, analytic or synthetic, which is involved *in* a concrete experience, included within it, may be called an **immanent operation.** Now, every conscious operation that we know of, or can think of, is immanent: there is a concrete experience which includes the thought of the operation, but is not exhausted by this thought

is larger and more fundamental than the thought, is not therefore itself operated upon. Transcending absolutely the concrete fact, we can think of no operation whatever. The windows of experience must be shut so that we may have a system and a science: fling them wide open and the circling Mystery all round will press and close in: science and common sense will all be lost. What is this Mystery? It is precisely the Fact. There is no transcendental logic, though there is transcendental life.

Case IV. An idea in the mind. The concrete experience which particularly involves an idea is not an idea itself in the ordinary sense of the term: it is a quiescent, intuitive fact possessing as good a title as any recognised fact in mental life. We call it idea because we ignore the whole and look to a particularly favoured and emphasised part, because in short we mistake a pragmatic fact for the concrete fact. When however my interest lies in the whole and not in a section, as for example when I am anxious to grasp and study the fact in its actual fulness, or to assign its place in the phenomenal life of the world, even the ordinary pragmatic interest goes, and the idea in the mind is readily dubbed as genuine an event as any over which the very life-blood of Science has been profusely spilt. Commonly my attention seizes upon a portion of the concrete fact, finds that this portion bears, necessarily and intrinsically, a reference to something beyond itself, and that is therefore dis-

turbed by a characteristic disquiet ; is temporarily interested in its antecedents and bearings, mistakes it for the whole fact of the moment, and calls it an idea. Now, what can be the base and the index of an idea? The cephalic and organic sensations, the half-attended sounds, sights and smells which undoubtedly enter into the constitution of the entire experience of the moment, the unfailing, though fluctuating, emotional tone which attends every fact in life, constitute in their not-commonly-differentiated massiveness the intuitive base or datum of an idea. Every pragmatic fact, whether an idea or a partial impression, must have a background, a setting, a basis, in order that it may stand, and this basis is always an immediately given substratum of feeling. But is this the whole element of the given in an idea-emphasised experience? Is not the emphasised idea itself equally given? Undoubtedly ; the idea is not only given along with the organic sensations and other elements of the intuitive background, but its ideal and remote character is not even scented in the original concrete experience which does not review, but only lives and passes away. So if the idea itself is to be fastened to the base, what will remain for the index? Even an idea soon gathers around itself a representative following : an idea in appearing finds a host of suggestions and associations and by these it is nursed, informed and consummated. This host of suggestions might well be regarded as the index of an idea. It is clear therefore that the

distinction 'given and suggested' does not always keep pace with the distinction 'intuitive and ideational.' In this last case a given idea goes over to the base which we have so far reserved for intuition; again, when a given substratum of feeling suggests and induces in me another immediate feeling——that is to say, a feeling carrying, necessarily and intrinsically, a reference to something beyond itself—-is this latter feeling to be regarded as belonging to the base or to the index? It should be observed, however, that the distinction of 'base and index' which I have introduced, though possibly a convenient and interesting one, pertains only to the view-point of the reviewing experience. If we settle to reserve the base for intuition, the idea in this last case, though given, will go up to the index; and the suggested and induced feeling of a given feeling, *e. g.* the delight which the *suggestions* of a song induce in me and which goes to augment the original delight produced by the melody, though suggested, will go down to the base.

Now, granting that the index is to be commonly reserved for idea, we may enquire as to what is precisely implied in such recognition of the index-element. It has become sufficiently clear by this time that an idea is known and judged as an idea in the reviewing Fact or F′. It may be the dominating element of a fact, but so long as the fact has not turned back upon itself or reviewed itself it is simply given, with, of course, an atten-

dant feeling of stress but not recognised as representative in character. For such recognition I must seize upon a part of the living mass, emphasise it, driving temporarily the rest into the twilight of consciousness, note it as a rehearsal of, or a prelude to, an experience of another *order* (a circumstance which I may define as *factual reference*), therefore haunted by a sense of tension and anxiety and accompanied by a belief that this is a dependent, subjective fact. It presupposes (1) temporary relaxation of the total fact or F; (2) accentuation of a part; (3) recognition of this part as having factual reference, and hence dependence and stress.

The *three* striking features in the re-birth of the Fact, in F′ that is to say, taken in proper order, should be regarded as the prototypes of the three fundamental operations in Science. Relaxation of the whole and accentuation of a part is the circumstance that attends the birth of Philosophy in its widest sense: Life will do only with a whole accentuated or emphasised in a part, aspect or feature: but thought is possible only by an *abstraction* of the accentuated part from the whole in which it is imbedded: Thought must take things to pieces and fancy that it can regard each in some manner of isolation and combination. Factual reference is the basis, as we shall see later, of all analytical processes in Mathematics and Scientific Theory, *e.g.* the reference of a point to a fixed origin and planes in Cartesian Geometry, or simply to an origin in vector-analysis. Stress in the life

of the Fact is the source and foundation of all kinds of agitation, whether physical, vital or psychical. Also, the conception of independent and dependent variable emerges primarily from the **polarisation of the fact** into feeling and thought, base and index. These however are only hints which I shall follow up as I proceed. I have just now regarded feeling and thought, base and index, as primary variables that have to set examples to other variables that we can think of. Now, let us look a little carefully into the nature of these *prototype-variables.*

Suppose we denote an absent fact, past or future, by the notation $Ft$, where $t$ represents time. In the beginning of this essay I have been somewhat anxious to bring out the fact that in F proper there is involved no thought of time or $t$. Then, if $i$ be the index, we have two relations: $i = \phi\ (Ft)$, $i = \phi\ (\beta)$, where $\beta$ stands for the base. The index in F′ is supposed by me to be a rehearsal of, or an introduction to, or to be otherwise determined by an absent fact; it is also believed by me as determined by the given substratum of feeling in F′; for the appearance of a given idea in the mind there must generally be a given assemblage of feeling or intuitive conditions, and to a given change in this mass of intuitive conditions there generally corresponds a certain change in the idea, thought or conception: the intuitive basis of the thought Hamlet cannot evidently be the same as that of a breakfast. In this example, the thought

of Hamlet is supposed to be determined by my previous acquaintance with Hamlet, and also by the total intuitive context of my life at the moment of the thought. Hence, coupling together the two relations we have, $i = \phi\,(Ft,\ \beta)$. Now, this being clear let us consider somewhat in detail this instructive relation.

1. Clearly $i$ is a dependent variable in relation to $Ft$, when $t$ denotes past time. But how can $i$ be supposed to be dependent variable in relation to it, when $t$ denotes future time? Do we regard an anticipating idea as in any way dependent on the fact anticipated? Can the actual be believed to depend on the non-existent? Without opening a discussion on this point I may briefly answer that the dependence of $i$ on a future fact may mean that a purpose or end or coming event shapes or otherwise determines a present idea in me: thus the ideal structure of my present experience will be very considerably determined by what I am going to do or have, though the purpose or the thought of the coming event may but very vaguely influence me: I may be hardly always conscious of the purpose or of the nature and circumstances of the approaching event. But is the purpose, however vaguely present, the thought of the approaching event, however imperfectly informed, a present or a future fact? And if admittedly a present fact, can ever $Ft$ as a *future* fact influence me and my belongings? Again, does a past $Ft$ fare better than a future one so far as this

influence or *action at a distance* is concerned? Is action at a distance at all possible in living experiece? Whatever may take place behind the scenes, something can be *known or conceived as* influencing my experience from a distance or from outside of it, as a past or a future fact is believed to do, only by becoming a part of the experience itself. In other words, no experience can outrun itself; if it is F′, its index may be known as a dependent variable in relation to an F*t*, but this F*t* as known is *within* F′, though of course it is *supposed* to be something outside of it: Thus $F' = E^{i}_{\beta} = \phi(Ft)$. This circumstance I may call *temporal projection of the index of Fact.* The past, the present and the future are dissolved in the timeless given of Fact-stuff or F; they meet in F′: thus the thought-index may be 'the *present* ideal structure is partly determined by a *past* fact and partly by a *future*.' By such projection in F′, *i* which was simply given in the previous fact, becomes determined by reference to three temporal planes (which I shall take leave to call *t*, T and *t′* respectively), just as in science an external thing is determined by reference to three spatial planes. In accordance with the symbols just used, a past, a present and a future fact will be denoted respectively as F*t*, FT, F*t′*. The experience which knows a past, a present, or a future fact is itself a time-less given fact F, or becomes in reviewing itself a present fact.

Now, suppose we represent present time by a horizontal plane. Then, appropriately we can represent past time by a plane inclined at a certain angle to the first plane and projecting downwards, and also future time by another inclined at a certain angle to the first and projecting upwards. *Angle* in the two cases will mean the quantities of attentive effort (say, $\theta$ and $\theta'$) that are respectively required to turn clear and vivid thought from the present level to past and future time as such : it is clear from introspection that in directing my regard from present outlook to past or future as such, a definite partial rotation of the line of view-point is necessary, and this rotation undoubtedly induces a feeling of attentive effort which we may, if we choose, represent by an angle. The three planes may respectively called T, $t$ and $t'$ as before. Now, every F' in its wholeness is a present fact and therefore appears in a line parallel to T ; but in its index there is commonly a reference to past and to future (*e.g.* an end in view or coming event), accordingly, this index can be resolved into two components one parallel to $t$ and the other to $t'$. Thus we have three components : F' in its wholeness and particularly its base $\beta$ is resolved parallel to T, and the index into two components parallel respectively to $t$ and $t'$. Here I present in a crude manner a few of the elements of what I propose to call **Temporal Analysis of Fact :** I shall endeavour to follow up this suggestive subject in future.

2. How is $Ft$, past or future, supposed to be affected by $i$? A past fact though supposed to determine the index of a present one is not supposed to be reacted upon by it: thus, in my conception, while $i$ is a dependent variable in relation to $Ft$, this latter is an independent variable in relation to the former. A future fact also, as a fact in the popular sense, is commonly believed by me as not liable to be affected by $i$: a coming event will be no respecter of my hopes and fears concerning it, or my ideas and calculations relating to it. In this sense, it has of course assured independence. But a future fact as a pulse of my life of experience cannot certainly be believed to be altogether independent of my present attitude regarding it: to a certain extent it is true indeed that I see or have a fact as I wish and am prepared to see and have it: the influence of a present fact is *prospective* in this sense that facts in my conscious life are ever in the making, and what I commonly accept as facts are only phases in a process which has possibly an endless before and an endless after: they are sections of an infinite concrete Fact. It is thus that I discriminate the cause from its consequences, the germ from the organism, the epochs of history in a mighty sweep of World-evolution.

3. The variation of $i$ necessarily affects $\beta$, or the mass of intuitive feeling in which the suggested structure is grounded, and hence affects $F'$: but this resulting variation is not uniform throughout the mass of $\beta$. There is a particularly unstable

part in the base (V), *viz.*, the organic sensations and emotional tone; and there is a relatively stable part (C) in it, *e.g.*, the visual appearance of a landscape at which I am gazing, or the monotonous moan of a dove to which I am listening. The echoes or suggestions of a fact as they gather make themselves felt most on the organic and emotional tone, but do not very sensibly affect the given sights and sounds that are already there. smells and tastes are more or less affected because of their kinship with organic feelings. It has been observed before how readily and naturally $\beta$ will affect $i$. The interaction or stress of $\beta$ and $i$ in the development of the Fact-stuff emerges then as our conclusion. There are no air-tight compartments in the Fact, and no conceived process in a Fact can be an one-sided affair. What has been so far called the reviewing Fact or F′ may b better described as **Polarised** Fact: $\beta$ and $i$ a the two poles; the development of a fact afte polarisation is partly a result of the stress betwee the poles.

Consider for a moment the polarised fact in slightly different aspect. $F' = E^{i}_{\beta}$.

Case I. Can $\beta$ be o or evanescent? Can th basis of given feeling ever altogether vanish in experience? No. The nature of this basis ma of course alter: the organic sensations which neces sarily accompany all conscious processes of an embodied spirit in normal and all known condition

may form no part in the conscious operations of a disembodied spirit, if one should exist, or of even an embodied spirit like ourselves in abnormal and unknown conditions; but in default of them some residual feeling, irreducible as we suppose, must remain. Experience, as we conceive or know, cannot be purged of its $\beta$ and ever be an all $i$.

Case II. Can $i$ be o or evanescent? Can an experience be *all* given and contain no element of the suggested or represented? Can I only feel without in the least recognising, remembering, expecting or otherwise gathering and representing? *Ordinarily* not; though it should be observed in passing that in Fact-stuff or F I only feel without discriminatingly recognising the base-element and the index-element. I have put down '*ordinarily*' in italics: in the sequel I may have occasion to discuss if such an experience as pure feeling or simple presentation is at all possible. I note however this: Since $i=\phi(\beta)$, $\phi(\beta)=0$, if $i=0$. Should this second equation be taken to mean that $\beta$ also is o? Not necessarily. Suppose there is a common independent variable ($x$) of which both $\beta$ and $i$ are functions, *e. g.*, what I believe as an external object in sense-perception determines both the basis of immediate feeling in me and the ideal structure raised upon the basis. Thus, $i=f(x)$, $\beta=\phi(x)$. Then the ratio $\frac{i}{\beta}=\frac{f(x)}{\phi(x)}$. Now, suppose both the numerator and the denominator become $=0$, when $x=a$; that is to say, let us imagine

that for a certain value of the common determinant —whatever that be—of $i$ and $\beta$, they both vanish and the ratio takes the indeterminate form $\frac{0}{0}$. Such a value of $x$ is, however, imaginary, for no actual value of $x$ can $\beta$ be supposed to vanish. But waiving this objection let us consider the ratio of $i$ and $\beta$ when $x$ is made $= a$. Here, by putting $x = \alpha + h$ and not $\alpha$ at once and then making $h$ evanescent, we can find the true or *limiting* value of the ratio to be $\frac{f'(\alpha)}{\phi'(\alpha)}$, where the accent denotes as usual the first derived function or differential co-efficient.

1. If $\phi'(\alpha)$ be 0, but not $f'(\alpha)$, the true value of the ratio is $\infty$. The differential co-efficient of a constant is zero. So that where the base of a Fact is an absolute constant, and the index a variable, the index is an infinitely large quantity as compared with the base : if the base be unity, the index is infinity. Is this a real or an imaginary case? We shall see.

2. If $f'(\alpha)$ be 0, but not $\phi'(\alpha)$, the true value of the ratio $\frac{f(\alpha)}{\phi(\alpha)}$ is clearly 0. Where the index is a constant, and the base a variable, their ratio or mutual relation is nothing. Properly interpreted this will mean that between a constant index and a variable base there can be no relation whatever.

3. If $f'(\alpha)$ be 0 and also $\phi'(\alpha)$ be 0, then we are thrown back again on the indeterminate

form $\frac{0}{0}$. But here we can find the true or limiting value by differentiating $\frac{f'(\alpha)}{\phi'(\alpha)}$ further, until the derived functions of the numerator and the denominator do not both vanish. Thus the true value of $\frac{i}{\beta}$ is that of $\frac{f^{(n)}(\alpha)}{\phi^{(n)}(\alpha)}$. The interpretation of this case is important. When both the base and the index of a fact are constant, their mutual relation is indeterminate for conception. It is true of course that for a certain value of the base there is a certain value also of the index: the base and the index of a fact, as we ordinarily know them, must vary together and remain constant together. But so long as they remain constant in a fact, the fact is dumb and alogical: it is Fact-stuff. To polarise the fact, to look into the constitution of the fact, we must somehow vary the fact, both in its base and in its power. If we attend to $\beta$, it is not only lighted up but sensibly changed, and $i$ is also faded and changed by being cast into the shade of inattention. A similar change takes place when we attend to $i$. Thus though we believe that a constant base carries with it a constant index and *vice versa*, yet we can discriminate and compare them not as constants but as variables. They are mutually dependent variables; and it is only by abstraction that we can apply the principles of partial differentiation to a fuction involving the two variables $i$ and $\beta$. Generally, the application

of mathematics to the Science of Fact essentially presupposes abstraction.

I shall separately note three interesting sub-cases.

Case III. If $i$ be $\infty$, the fact again takes an indeterminate form $\beta^{\infty}$. In the previous case where the index was supposed to be o, the fact assumed the form $\beta^{0}$, which, apart from all discussion regarding the *ratio* of $i$ and $\beta$, might be taken as equivalent to unity on the analogy of the accepted mathematical principle $a^{0} = 1$. This analogy however, like any other analogy employed in the Fundamental Science, ought not to be assumed as proving it. The unity of the Fact from the evanescence of the index is established by direct reflection. Even a Fact-stuff is an undifferentiated *complex* continuum, not a synthetic manifold indeed, but a manifold alogically appearing as unity. Now, this being the constitution of a given fact, let us imagine the representative, suggested, ideal structure to be gradually removed; what becomes of the fact? The manifoldness of the fact also gradually crumbles away: the full-fledged orange that I am looking at soon ceases to be an orange and forthwith becomes an yellow surface. Is this yellow surface objectified and localized a pure presentation, not in any way backed and seasoned by the echoes of my past experiences, not in the least prejudiced by my hopes, interests and expectations? Hardly; but even assuming that it is very nearly a pure presentation, how much simpli-

fied the manifoldness, cumbrousness and complexity of my experience has become! In the *limit*, I may say therefore, the complex unity of a fact becomes simple unity when the gathered or representative index has become evanescent. Or,

$$\text{Lt } i = 0 \ E \frac{i}{\beta} = \text{unity}.$$

This principle underlies the mathematical principle that $\frac{a^m}{a^n} = a^{m-n}$, or that in division the powers are subtracted, and hence that $a^0 = 1$.

What are called acquired perceptions are hard to scare away in visual experiences, so that the verification of the above limit is hardly possible in those cases. But sitting up quietly in the dead of night amid darkness and stillness, and purging my mind of all thought, I have often listened to a soft, monotonous, continuous sound, in a state of complete abandon to and absorption in it. Here the index has been reduced to a minimum: how does the given substratum of feeling appear to me? It is a simple, featureless unity, very much unlike the unity of a song. In a similar mood, gazing up into the clear, blue sky, or having nothing else to regard than perfect gloom shrouding me, I have experiences of a kind of simplicity to which the luxury and richness of my life's menu will not ordinarily allow me to approximate. To the simplicity of the two facts, *viz.*, just going to be asleep, and just going to be awake, we already have alluded.

Now, what will be the value of the limit $Lt\ i = \infty E^{i}_{\beta}$? *Infinitesimal* index has made a fact a simple unity; *infinite* index will, I think, make it infinite. The index and the base have been discriminated in the polarised fact, and not in the fact-stuff: these two are conceived as dividing the fact between them. In all ordinary experiences these two elements are recognised as finite. Now, in order that the index may be conceived as infinite, the base must be reduced to nothing; for if it be something, that something will limit the index and thus make it finite. *All* must be the index, and nothing base; but since intuition is an inalienable datum of experience, the all-and-infinite index will really be all-and-infinite base: the base will be *everything*. This is curious logic, but it must be true. The fact is that the opposition of index and base is gone when the index is supposed to become infinite, and that the fact itself becomes an all-given infinity. The metaphysical consequence of this principle is momentous. Suppose we conceive an Universal Mind, analogous to Hegel's Realized Absolute or Green's Spiritual Principle in Nature, in which the infinite tissue of relations which we know as the world exists eternally realized. Can the opposition of 'given and suggested' exist amid the infinite richness of such a Mind? We cannot conceive. In the later sections we shall have fitter and ampler opportunities to dilate on the consequences of our principles; at present we

shall be content with the principles themselves. Thus we have

$$\text{Lt } i = \infty \, E^{i}_{\beta} = \infty \; .$$

Case IV. If $i$ be $= c$ (constant), so is also $\beta$. For a given mass of intuitive feelings there is a certain index and can be no other; and *vice versa*. But as we have already observed, the base and the index can be discriminatingly known only as variables. They are constants only in pulses of fact-stuff. Try to let alone either the base or the index undisturbed in the judging fact, and the eye of judgment is put out, polarisation is gone, and the fact at once reverts to dumb, alogical fact-stuff. Thus we have

$$\text{Lt } i = c \, E^{i}_{\beta} = F.$$

Case V. Closely analogous to the preceding case is this last. When $i$ is undefined——I do not say indeterminate——, when I do not point to any part of the fact-whole as the zone of the suggested *defined* by the rest of the mass which I conceive as given, the base is also, from the very nature of the case, undefined. I do not allude to the *completion* of the process of their definition in the mass, which may take time and may never be an accomplished fact; I refer to the *beginning* of their mutual definition. Thus we have

$$i = ?\ (\text{undefined}) \; E^{i}_{\beta} = F' = F.$$

Before proceeding to the fundamental Law of Fact-operations, I shall do well perhaps to consider

for a moment the various *orders* of Fact that have been so far brought to light.

I. In the beginning of this essay I have dwelt at some length on the nature of the Fact-stuff. Even what is a Reviewing Fact in relation to another fact analysed and reviewed, is in itself a Fact-stuff. A Fact in appearing can look before and after, but it can never transcend itself, or can in relation to *itself* be a reviewing Fact. We have however, **Fact-stuff** $= F \div F_c$, where *c* denotes that the fact is concrete.

II. The reviewing, awakened or polarised fact has also received some measure of attention. Polarisation as Maxwell conceives it is the process by which an elementary portion of matter develops opposite properties on its two sides. Suppose $\delta E$ is an element of an experience-continuum ; polarisation is the process by which $\delta E$ becomes $= i\ E\ \beta$, or $E'_{\beta}$ where $i$ and $\beta$, though mutually dependent, are assumed to be opposite in character. We shall not pause here to discuss in what sense and to what extent they are opposite. Under this head we have **Polarised Fact** $F' \div F_c$.

II*a*. In Fact-analysis we have, as we shall presently see, not only *double* polarity appearing in the constitution of the fact, but triple or *triangular* polarity, in which an element of the continuum $\delta e$ is broken up into a *base*, an *index*, *and* into a *co-efficient*. This co-efficient of a reviewing fact I have yet to define. A fact is conceived by me as including

not only the elements of the given and the suggested——its complete nature is taken by me as exhausted not simply by what I *do* directly feel concerning it and actually ascribe to it——but an indefinitely larger and possible element outside of what are *actually* given and suggested. The belief that a fact is possibly larger than what it is directly thought to be is indeed *inside* and not outside the concrete fact. It is not an element added on to the fact F, but developed out of, and imbedded in, it. Nevertheless it is an especially interesting feature of the concrete reviewing fact, and deserves a special exhibition like the base-element and the index-element. Thus a fact is ordinarily taken by us as an amalgam of actual and possible, of definite and indefinite, or I might even say, of finite and infinite. In a certain sense, the finite is never complete and sufficient by itself: it requires a plenum of infinite or, at any rate, indefinite to vitalize, sustain and consummate it. Thus the infinite is immanent in the finite and transcends it: the tiniest fact is a twinkle in the eye of the Eternal Wonder, the faintest echo is a ripple in the ocean of Unfathomable Fulfilment. But poetry and metaphysics apart, every fact is believed by me to live and grow in a sustaining plenum of the possible: if it is an actual given *plus* an actual suggested, it is also a possible given *plus* a possible suggested; at any stage of the fact-possession I do not believe that the tale has been all told, that I have and know all that is to be had and known

regarding it, or even that I have and know it *as* a normal being under normal circumstances would have had or known it. This interesting and distinguishable element of the reviewing fact I propose to call its *co-efficient*, to be denoted by the prefix $\alpha$. Thus the triangular polarity of a fact will be represented by the symbol $F' = \alpha F^{i}_{\beta}$. The co-efficient will come up more prominently for future treatment.

Here, however, I cannot resist the temptation of noting one or two points touching the Fact-Co-efficient. The co-efficient as I have conceived it is the pole of the possible in the constitution of the reviewing fact opposed to the base and the index which together constitute the pole of the actual: the given feeling is an actual element of the fact and so is the suggested idea : both are actual modes of consciousness. What is opposed to them as the pole of the possible is on the other hand not an actual state of consciousness ; I merely believe that the fact as I have it *can* grow, can suffer changes affecting both its mass and its configuration, but as to the nature or lines of its growth I have as yet no *actual* conception. If I have any actual conception, then the portion of the fact to the extent of that conception will go over perhaps to the index : in fact, my experience develops simply by such continued transference of feelings and ideas from the realm of the unknown and unsuspected possible to that of actual consciousness as represented by

the base and the index. The suggested element of a fact may also be taken to mean a body of possible feeling—an idea is a possible feeling. But this is possible in a quite different sense. As an idea is a possible feeling, so is a feeling a possible idea : every presentation in conscious life suffers the chance of being represented. Nevertheless, both are actual states or conditions of consciousness in so far as they have been polarised into the base and the index of the reviewing fact. The co-efficient, on the other hand, though not being an actual state is necessarily supported by an actual state : the intuitive datum of life is unfailing, and the Primeval Night of an unknown possible can settle round a snug little fact only by securing an intuitive basis within it to hinge upon. Nothing can touch or belong to a fact without touching or forming a part of its basis : in any case, I must *believe in*, and have a sense of, the unknown and possible within the limits of the fact itself, to have this third dimension or pole of the fact pronounced. Where the sense of the possible is evanescent the fact is known and taken complacently as it is actually found and defined in consciousness. I may also note some cases concerning the influence of the co-efficient on the Fact.

(1) Clearly the three poles or dimensions, $i$, $\beta$ and $\alpha$ are not mutually independent variables ; ordinarily at any rate, one dimension cannot be assumed to vary keeping the other two constant. As before, the principles of Partial Differentiation

apply to the concrete fact only after abstraction. We believe that for a given value of actual there is only a *certain* possible and no other regarding a fact, and *vice versa*. This belief underlies, as is clear, the principle of the Uniformity of Nature and particularly that of Universal Causation. If the actual structure of a fact has changed, the possible structure cannot be assumed to remain unchanged—'fact' indeed being taken in the full, concrete sense of the present essay, and not in the abstract, pragmatic sense of popular usage.

(2) When the co-efficient or $\alpha$ is constant (c), the actnal is also constant. But, then, in the reviewing fact the three poles cannot be attended to *clearly* all at once, and these being complex variables, one which necessarily changes upon being attended to dynamically influences the other two or changes them. This can be readily verified from actual experiment. Hence we are in a position to lay down and appreciate the following principle :

$$\text{Lt}\ \alpha = c\ \alpha E^{i}_{\beta} = F' = F.$$

(3) By definition $\alpha$ is indefinite or even unkown. To make it definite to a certain extent is to enrich the actual to *that* extent : but the unkown or $\alpha$ still remains. But suppose it is completely defined ; then $\alpha = 0$. And if A be realized $\alpha$ which is distributed between $\beta$ and $i$, we have

$$\text{Lt}\ \alpha = 0\ \alpha\ E^{i}_{\beta} = 0\ F^{i}_{\beta} > A.$$

(4) Let us approach the last problem from another view-point. Suppose we gradually reduce the element of the possible in a reviewing fact, until at last this becomes evanescent. What becomes of the fact ? It is *all* actual (including of course both base and index) to which, as I conceive, no increment is possible : the limit of possibility has been reached, or possible and actual have become identical. What does this complete exhaustion of the possible in the actual, of the unknown in the known, imply ? It may mean either of two things. That the actual fact for experience has become infinite, knowledge has become limitless, so that the field cannot be partitioned between actual and possible at all ; or that the fact has become a *pure* actual, to which as such, no possible can be fastened in conception. An example I must take to illustrate this distinction between *all* actual and *pure* actual. Suppose I have a feeling in my mind and I am interested in knowing the feeling actually as it is given. In intuition I know it of course ; but in reflection, though perhaps it is impossible to recall to life a fact one dead and cold, I fancy that I know it in a fashion. Now, if my interest is in the *statical* fact itself and *not* in its history or development or objective correspondence—if, that is to say, I disavow for one moment all interest in the *dynamical* fact—the fact is a pure actual. A feeling as feeling is final and unquestionable for the mind : it is not projected and referred to anything outside of itself, hence there can be in it no suspicion of objective

reality or unreality. Provided I do not bother myself about the necessary fallibility of reflection in the portraiture of living experiences, and hence do not question the accuracy of the reviewing fact in relation to the fact reviewed, an experience *as* experience I take as ultimate. If I have seen a snake instead of the real rope in the dusk, the snake and not the rope is the fact for my experience. So long as I take my stand squarely upon it and refuse to budge an inch, there can evidently be no question as to what my experience would really or *possibly* become. Securely planted in my own experience for which as experience I am the last authority, I cannot be challenged and contradicted on any historical, practical or objective grounds. I call this experience, self-sufficient and secure, jealously limiting and guarding itself, *pure* actual. *All* actual I have taken to mean infinitely actual, not shutting out the possible which may well exist without being regarded, but swamping and swallowing up the possible. In ordinary experience we do not come near to this. We have however

$$\text{Lt}_{\alpha=0}\, \alpha E^{i}_{\beta} = E^{i}_{\beta}, \text{ or, } \infty.$$

(5) Lastly, when $\alpha$ is infinite, fact may mean either of two things according as 'infinite' is taken to mean all-pervasive infinite suffering no limitation whatever either in magnitude or in direction, or an infinite limited in one direction but unlimited in another or other directions (cf. the mathematical notions of $+\infty$ and $-\infty$).

(5*a*). When we take 'infinite' in the former sense, an infinite co-efficient will render the fact itself infinite and *all* possible. But a fact all possible and no actual is an imaginary case. Substitute the world for the fact ; according to certain cosmological theories the manifested is reabsorbed into the unmanifested after one cycle of creation and so remains till a new cycle begins. Now, does the world become by such reabsorption all possible and *no* actual ? I merely raise the problem. The case, however, admits of two solutions ;

$$\text{Lt}\ \alpha=\infty\ \alpha\ E_{\beta}^{i}=\infty\ F_{\beta}^{i}=\infty\times\text{unity}=\infty.$$

*or*,

$$\text{Lt}\ \alpha=\infty\ \alpha F_{\beta}^{i}=\text{infinite possible}=\text{infinite actual.}$$

This latter solution requires elucidation. Polarity is relative, and to be maintained must presuppose *at least* two poles. One pole simply means no polarity at all : there can be no monopolar fact. Hence when $\alpha=0$, $E_{\beta}^{i}$ remains, for still there is the polarity of $i$ and $\beta$. But when *all* is possible and actual $=0$, polarity is gone ; so that possible *as* possible cannot remain ; and since fact can never be conceived to be wholly emptied of the substance of the given, 'all possible' becomes equivalent to 'all actual' or to all intuitively given'.

The meaning of the saving unity was suggested by the analogy of the cosmological example. Does not the unity also limit the all-pervasive infinitude

of the possible? Undoubtedly, if the unity is assumed to be something external to the infinity. I shall not, however, pause to discuss the metaphysical consequence of this principle.

(5. *b.*) If 'infinite' be taken in the latter sense we have a simple case, *viz.*,

$\mathrm{Lt}_{\alpha = \infty}\, \alpha E^{\dot{i}}_{\beta} = F'$ itself; for, in all ordinary reviewing experiences the extent of the possible is believed to be infinite limited only by the circle of what are actually felt and represented in the experience.

III. **Pragmatic Fact** is the portion of the fact especially attended to and passing ordinarily for the concrete fact. The nature of the pragmatic fact I have already dwelt upon. It is to be noted, however, that the pragmatic fact is an abstract and not a concrete fact. Hence the materials of Science, starting with psychology and ending with Pure Mathematics, are all necessarily abstract. The purely concrete fact absolutely refuses to give sittings to the man of Science: Science begins the polarised fact or F′ which, however, may be looked upon as concrete so far as it goes. Thus we have

Pragmatic Fact $= f_p = f_a$ (abstract).

IV. **Fact-Sections** mean the elements and relations among elements into which F′ breaks up an experience. The fact-sections are obviously created by the successive movements of the regarding attention over a given continuum of experience: this is commonly called differentiation of the

continuum. The reviewing fact is conceived to be these differentiated elements again put together *plus* of course a necessary intuitive basis. Thus using the symbols $d$ and $S$ respectively for differentiation and integration, and putting $f_s$ for fact-section, we have the obvious relation

$$F' = {}_{\alpha}E^{F_t}_{\beta} = \int edf_s,$$

which means that the reviewing fact *conceives* (hence the place in the index) a given previous fact as equivalent to a number of differentiated fact-sections integrated : an apple is thus believed to be a synthesis of a certain colour, a certain taste, a certain flavour, etc. But the index which includes this analytic and synthetic conception must have a substratum of immediate feeling to rest upon in the reviewing fact ; commonly $F_t$ as we have now represented to ourselves may not be *exactly* the same as that was presented to us, and hence that a future reviewing fact returning to it, F″, may *possibly* represent it more faithfully, or at any rate, in a different manner. This circumstance has been indicated by the prefix $\alpha$. It is the suggestion of later development contained in F′, *viz.*, that this may develop into F″.

Thus we have Fact-sectionF′ $= f_s = f_{\alpha}$.

V. **Fact-operation** is the conscious process or operation by which (1) F is changed into F′, and (2) F′ is changed into $F'^{dn}$, where *dn* means *n*th stage in the development of F′. To a fuller under-

standing of this I shall endeavour to come presently ; but in the meanwhile we have

$$\text{Fact-operation} = f_0 = f_a.$$

I shall perhaps be permitted to add two extraordinary cases.

VI. Where the index of a fact is zero, the fact is an absolute unity, admitting of no diversity either internal or external. Or, more correctly, with the evanescence of the index-pole the base-pole also vanishes : the fact becomes an unpolarised fact of pure given. Such a fact is clearly beyond the antithesis of 'one and many'. But pure unity is the conception that perhaps comes nearest to the native inscrutability of the Fact this is what we think when the veil shrouding Existence is *just* uplifted. Now, what can be our co-efficient in such a fact ? A fact absolutely one can have neither an index nor a co-efficient. *Absolute* unity I have defined to be 'unity presenting no internal or external diversity.'

VII. Where the index is infinite, the Fact itself is infinite. I have already distinguished between two kinds of infinitude ; an infinity that suffers no limitation either in magnitude or in direction or in category may be called absolute infinitude. Space is infinite in magnitude and direction, but it is not so in category. Space is *not* Time, it is *not* Matter, it is *not* Force, and so on : these are so many limitations to the infinitude of Space. It is nevertheless *scalar* infinity, beyond all limitations of direction. But in mathematics we commonly

distinguish between $+\infty$ and $-\infty$, where evidently infinitude is taken as a directed magnitude. I might call this *vector* infinity. Now, if the index is an absolute infinity, it is all absorbing, and hence cannot maintain itself apart as a pole of index at all. So that the polarisation of the fact vanishes, and we have an infinite stretch of mere given intuitively known, but not conceived, as given. If it is a scalar infinity, admitting of a rival category or categories, we should have perhaps three poles of infinite capacity : we have an infinite presentation, with an infinite actual suggestion, and with a sense of infinite possibility. Is this a real or an imaginary case ? I only raise an enquiry, but do not pause to meet it. When, lastly, the index is a vector infinity—when the mind is teeming with infinite suggestions in *one* line or direction, the Fact to which such an index is attached cannot itself be finite. Of the three aspects or poles of a fact, the two actual poles stand on a somewhat different footing in relation to the possible. The possible may be conceived to be infinite without necessarily making either the actual presentation or the actual representation infinite. The fact also remains a finite fact. But, on the other hand, infinitude of either the base or the index will make the fact itself infinite. Let me give names to these two last kinds of Fact : *Unitary Fact* ($F_u$) and *Infinite Fact* ($F_i$) respectively.

Adopting the suggestive distinction of *Scalar*

and *vector*, I may say at once that any concrete fact, $F_c$, is a scalar and not a vector. A fact is analogous to an area or a volume to which the notion of direction does not apply. Taking 'direction' in a somewhat flexible sense I observe that $f_p$, $f_s$ and $f_0$ all imply direction of regard and emphasis and hence the altering of the potential of a point, feature or aspect in the given continuum. The given continuum is not itself an equipotential surface. the difference of potentials, $V_A - V_B$, between any two points, A and B, is not zero. But with the incidence of regard over an element of the surface, its potential is changed. Suppose we denote a scalar fact as SF and and a vector fact as VF. Then, can we define $f_s$ as that which changes SF into VF? No. There is no miracle by which a fact can be made to cease to be a fact : $f_p$ and $f_s$ which have been regarded as directed magnitudes can never be isolated or taken apart from the concrete tissue of existence. So that $f_0$ can only change SF into $SE_\beta^{i=VF}$. $f_0$ itself cannot, however, be regarded as pure vector ; it is a process of experience by which F is changed into F′, may be resolved into a scalar and a vector part. How, for example, can I turn from the intuition of a rose to an analytic conception of it ? An operation is necessary which is partly intuitive and massive and scalar, and partly representative and directed and vector. there is an element in the operation which lacks any sign of direction and another element which

possesses. Indeed fact-operation may be regarded and studied from two distinct stand-points. The operation by which F is changed into F′ may itself be a complete and concrete fact ; or it may form a part of the reviewing experience itself: in the reviewing fact itself there may be a representation not only as to *what* the previous fact was but also as to *how* such a representation takes place : thus the reviewing fact may involve both the elements and the manner of representation. In this latter sense, $f_0$ is an abstract segment of a fact. Commonly, however, there may be distinct reviewing facts, one concerned with the representation of a fact as it was, and the other concerned with the representation of the manner or way in which there has been a transition of experience from F to F′ : this latter interest, we note, is generally scientific.

### 8. *General Law of Fact-operation.*

The fundamental equation of the Fact is

$$F'_0 = U, \qquad \ldots\ldots\ldots\ldots\ldots (1)$$

where the right-hand side means unthinkable or alogical. Clearly, Fact is *not* unknowable, for in its very essence it is experience in its concrete wholeness. Every concrete experience is unthinkable or alogical in itself ; it becomes thinkable or logical as represented in a succeeding reviewing fact. The accent shows that a fact can think itself alogical not in presentation but representation.

The first derived equation of the thinkable Fact is

$$F'_1 = I^f_1, \dots\dots\dots\dots (2)$$

where the right-hand side expresses the fact that F is thought as an unbounded continuum finitely determined and constituting a unity. This requires a bit of explanation. An experience is taken by me as bounded, limited and therefore finite, because I am swayed by a pragmatic interest and care to note only particular features in a continuum. But is the experience itself finite on that account? I think not. Every experience that comes to me, even that of a dew-drop or a particle of sand, appears not as exhausted in the special object of its regard, but as a continuum spreading itself without bounds. There are the outlying fields of comparative inattention, the massive organic sensations which constitute a larger whole in which the dew-drop or particle of sand is set; but perhaps even these outlying vistas of twilight and shade may be thought to be finite in extent. But I feel my concrete experience of the moment does not terminate with these: I feel that what I know as the dew-drop, the half-attended myriads of sounds, sights and smells which enrich my experience of the dew-drop, the organic sensations, emotions and ideal suggestions constitute only a *part* of the whole experience: the whole experience being distinctly felt as an infinite expanse of consciousness or awareness in

which is distinguished a finite mass of especially determined feeling, *e.g.*, dew-drop, cephalic feelings etc., constituting, however, in all the wealth of its variety a unity. In this respect, every experience may be compared to unbounded space in which, let us imagine, a rainbow has appeared. We need not ask the proud philosopher to tell us what the rainbow may be: but do we not actually feel the hues of this celestial delight gradually fade and melt away as our attention moves from the central colours of the band to the borders and then to the surrounding space? Who will say that my whole experience of the moment is exhausted by the colours of the rainbow? I have an experience of space especially emphasised at a particular feature. What the rainbow is to the whole extent of space, my pragmatic, finite fact is to the whole concrete experience of the moment: consciousness like space cannot be limited, though of course it can be determined. But these determinations of experience, cannot suppress or exhaust whole consciousness, as also space cannot be exhausted by the objects in it. As objects appear in space without setting bounds to its whole extent, so dew-drops and corpuscles, as well as the glories and terrors of the universe may live in consciousness without using it up. I need not try to explain this law of experience further here: a more proper occasion may arrive hereafter. I shall be content, however, to make an appeal to direct reflection. Waking up from the spell of absorption in the

presented fact, do I not know my experience as an unbounded continuum——a limitless ocean of awareness——in which special determinations, as colour, sound, smell, and so on, may exist, as ripples do on the heart of the ocean, constituting in their manifoldness a unity ? If I can say yes, my first derived equation of Fact is understood the Infinite holds the finite not simply as a possibility, a co-efficient, but also as an actuality. Thus the infinite never leaves me for one minute: I actually live, move and have my being in the infinite. Before passing on to the next derived equation of Fact, let me guard against a misconception that may possibly arise with regard to the symbol in (2). What appear in the places of the index and the base do not, however, represent them.

$$F'_{2} = Sed\lambda, \ \ldots\ldots\ldots\ (3)$$

which means that a Fact is taken as the synthesis (S) of experience (*e*) differentiated with respect to $\lambda$ which stands for a form to be determined presently. There was no *conceived* analysis and synthesis of experience in the original fact. Strictly speaking also, the last two equations for F′ are not absolutely correct ; for a fact which includes a thought either of $I_1^f$ or of $Sed\lambda$ is certainly larger than the thought itself. The fact-whole cannot be equated to the fact-part. Agreeably with our foregoing symbols, the right-hand expressions not, only in the second and third but also in the first equation ought to go up to the index of the con-

crete facts. But here we shall simplify matters somewhat by pardonable abstraction. The actual mystery of existence is unfathomable; the concrete fact is unrepresentable. There can evidently be no *equation* of the fact——whether the fact-stuff or the reviewing fact in its concrete fulness——; for equation presupposes judgment, and a fact, though involving judgment or representation in one of its aspects, is itself always a presentation and no judgment, and it cannot be equated to a judgment. For the present, however, I shall put down a fact for what it is taken to be.

Suppose we take the distinguishing factor $\lambda$ to be equivalent to the triangle of polarity discussed before, $\lambda = \alpha \overset{i}{\triangle} \beta$. Then, adopting the above meaning of S we have

$$F'_s = \int e \, d\alpha \, di \, d\beta \ldots\ldots\ldots (4)$$

which means that a fact is taken as the synthesis of elements of experience differentiated with respect to the three poles $\alpha$, $i$, $\beta$.

Suppose again we take the discriminating factor $\lambda$ as equivalent to the polar triangle $(p, q, r)$, which respectively stand for Subject, Object and Stress between them. Here evidently, the fact is thought as a synthesis of experience differentiated with respect to the three poles. It is an experience in which we have a thought of the subject acting on the object and the latter reacting on the

former. 'Synthesis' in these equations should not, it may be observed, mean simple summation or integration.

So we may have a fact reflected in thought as various equations of the kinds illustrated above as we impart different values to the discriminating factor $\lambda$. The above equations, it should be noted, form the data of the Science of Mind. If however we propose to give purely objective values to $\lambda$ we have equations introducing the Physical Science. Mathematics of a certain fundamental character plays and negotiates between them.

Suppose we represent $\alpha$, $\beta$ and $i$ as three non-parallel planes. Then obviously a complete section of the *reflected* fact in (4) may be represented by a triangle having its three vertices on the three planes. Now, if the area of the triangle formed by joining *any* three points in a line be zero, the line cannot but be a right line. In the present case, if we have the area of the fact-triangle formed by joining three points in three planes equal to zero we have the following three cases.

(1) A right line touching two planes and also the third produced, if necessary. Interpreted : Experience involving actual feelings and suggestions and also thought of possibility, but *not* representing them as referred to three distinct poles or categories, if I may say so.

(2) Two of the planes may coincide, so that we are left with two planes only. In this case, we have a straight line touching two planes, or, an

experience involving, for example, actual feelings and suggestions but no thought of possibility. Can there be here a conscious discrimination of the categories *s* and *i*? Yes; by such discrimination the fact will not cease to be a right line. We could not allow such discrimination in the first case, because of this law: To discriminate any two elements A and B in thought is to connect them together in thought as though by a right line; let this be $\overline{AB}$. Let us next discriminate in thought between AC and CB; then we have other two right lines *not wholly or partially* coinciding with the first or with each other. Hence the three elements cannot be in the same right line, or in other words, $\overline{AB}$, $\overline{CA}$ and $\overline{BC}$ will form sides of a triangle.

(3) Two planes may coincide with the third, so that we are left with only one plane. In this case, we have a* straight line in *one* plane, which, interpreted in terms of our Science, means that we have, for example, an experience involving a thought of pure intuitive elements, and also a discrimination between any one such element and one other: it is an experience represented as *only* intuitive in which an element of intuition A is discriminated from another B, and hence is connected with it by a right line or even perhaps by a vector $\overline{AB}$. The vector, however, should not be taken in the usual sense to mean transference from A in the direction of B. In the discriminative judgment 'A is other than B' there *is* indeed involved a transference or

translation of regard from A to B and from B back to A, so that

$$\overline{AB}+\overline{BA}=0.$$

In narrow inspection and scrutinizing regard this translation of regard may assume the condition of oscillation but in order that judgment of the kind referred to may be at all possible a new fact must come taking under its wings both A and B, and profiting by the oscillation of regard that has preceded it. Thus paradoxically things must meet in thought in order to differ and oppose. All this is now accepted psychology. In dealing with the vector we have come unawares at a stage where the fundamental law of fact-operation stands revealed in its mystery and nakedness. For one moment we have a continuum of experience especially emphasised at the aspect or element $P_*$, so that the fact is $E^{P_*}_{t_*}$, to reclaim a long deserted symbol of experience where also, it may be noticed in passing that, $P_*$ and $t_*$ do not stand for index aud base but for quite other things. At the next moment, let us imagine, there is translation of regard from $P_*$ to $Q_*$. It is patent to direct reflection what such translation of regard means in life: not that $P_*$ is altogether blotted out and $Q_*$ is abruptly ushered into existence, but that there is a falling off in the *tone* of the former and a proportionate rise in that of the latter : it is not a question of complete setting and rising, negation and affirmation, but one of waning and waxing, mini-

mum and maximum. What after this? There may commonly be a reversion of the process by which regard is again brought back to its former place. This tendency of thought to flow *out* from a temporary centre of rest and then to return to it is, I conceive, fundamental. This pulsation, periodicity, flow and ebb in experience is the prototype of all fact-operations : *it is the fundamental type to which all operations, mental or physical, can be reduced.* I am coming to this fundemental law presently, but as an explanation of the discriminative judgment 'A is other than B' I offer this : There is a moment of rest after each act of translation from A to B and from B to A. Starting from A when I come to B, I am just at the bounding limit of an action going to be reversed: $\overline{AB}$ has just ended and $\overline{BA}$ is just to begin. At this point of time there is absolutely no reason why I should go on in the directlon $\overline{AB}$ rather than in the direction $\overline{BA}$; and *vice versa.* For this moment, therefore, I must pause and take breath. The fact here cannot, however, be $=$ o. This dead point, this neutral zone is not evidently a position of utter barrenness. It is a position of experience where B is the actual focus favoured or emphasised, and A from where my regard has started and to which again it is just going to revert, is present in it *potentially*, or what is the same thing, ideally or suggestedly. Similarly when from B my regard has returned to A, my emphasised experience is no doubt A, but B also exists in *that* experience potentially or suggestedly.

Now, what we call understanding or judgment expresses only such a dead-point or neutral zone in the fact-process. Fact cannot remain idle : it must ever flow. Such at least is the construction which thought puts upon the living fact. Fact is a continuum, my universe ; the continuum is ever moving, my universe is ever changing. But it is not a movement, a change purely and simply in one way ; again, this movement does not involve an actual translation of the concrete features of the continuum itself. It is the agitation that is propagated, and not the actual particles of the mass. Suppose we take two positions in the continuum, A and B. When my regard is passing on along the continuum the portion of the mass, A, receives, let us suppose, my attention first, and it sinks and my attention travels on to B. A which rose to the crest of the wave of vividness has now sunk, and B has risen to the place instead. Thus, we must not imagine that what is translated from A and B is the actual portion of the continuum at A. A concrete fact can live but once, and there can evidently be no actual transference and resurrection of it. The movement of the wave of attention over a continuum of fact seems to me to be the model of wave-motion. However that may be, let us imagine that there has been a translation from A to B, which as we have seen does not mean that the portion of concrete fact in the former position has actually moved on to the latter. Now, when my regard is in the latter position, there is, let us sup-

pose, a turning back, a reflection, a reversion of the agitation. But as in this the forward sweep of agitation is not suspended but only exceeded, as in other words, the agitation recoils in spite of the forward flow which is continuous even while thought is apparently drifting backwards, the actual reverse agitation will be the resultant of two component tendencies. These two opposite component tendencies mingle in every normal movement of regard——the movement from A to B is as much a resultant as that from B to A: there is no absolute beginning of the processes in life, and hence no actual room for the pure positive (forward) component. But though the tendencies mingle in every actual process, their proportion of composition is not uniform: when the positive prevails over the negative the process is progressive ahead, when the reverse, the process is retrogressive. The ratio of their combination may however be governed by a periodic law.

What will happen when the positive course is just completed and the negative is just to begin? I have of course assumed that B is the position of the continuum where, under the operation of the periodic law, thought-agitation is made to recoil; it should be observed, however, that the recoil of thought may not apparently begin until we have reached the position C farther off; it may be questioned also as to whether there is *really* any periodic *law* governing this operation, though it may be freely admitted that the agitation in point

does periodically return. We shall meet, if necessary, this objection in a more proper place; but here we readily perceive that at the position B where we have assumed our reflection to begin, the motion *of translation* gives place for a moment to a motion of *rotation*. This rotation means in actual experience that my regard appears to rest on a certain position B of the continuum before darting back to A. Agreeably with the view here expounded every substantive part in an experience may be regarded as a position of rotational agitation of regard, a sort of eddy or vortex created by a certain disposition of the tendencies referred to before. Now, will this view stand to radical empiricism?

Be that as it may, what is the empirical consequence of the fact when I have this rotation, eddy or vortex of attention at the position B? First, B gains in tone and vividness, and becomes a substantive part of experience for a moment. Secondly, since B is, by supposition, just the position where the return sweep is to begin, A becomes *potential* here, which means in experince that A is suggested or ideally revived when attention rotates at B. We need not go into the dynamics of the process now, but it will be evident that when attention has returned to A and apparently resting on it, B will become potential there. I propose to give a somewhat wider latitude to the meaning of 'potential'. The expression 'A is potential at B' will mean *either* that A is actually suggested at B and therefore forms a part of the *index* of the fact at B, *or*

that it imparts a tone to B as a part of its *co-efficient*; in any case, a previous fact is sure to prejudice in some way a future fact, so that the fact 'B after A' cannot be equivalent to the fact B alone. But is there no *via media* between actually recalling a past fact and assigning it an undefined place in a vague sense of unbounded possibility? Undoubtedly there is, if we only remember the following principles of perception and revival: What we call the perception of an object does not, in common sense, stand for a statical, fixed experience. Suppose I am for some minutes looking continuously or from time to time to the same external object before me. Have I the same perception or identical perceptions for all this while? Common sense which is pragmatic will have experiences shorn of all their irrelevant details, and will take them as identical facts when they are only more or less similar. But the concrete facts for these successive moments can never be identical. Even if the objective stimulus were to remain the same for two consecutive moments $t$ and $t'$, and other conditions of experience were also to remain unchanged, the concrete experiences for these two moments could not be absolutely the same. As a consequence of this I have what is called growing or dynamical experience when I am supposed to be interested in one and the same object. My first acquaintance with an object gives me perhaps only a very hazy picture of it: I have perhaps a glimpse of only its most general features. The successive

pulses of regard directed towards that object bring out the details more and more, and so the picture grows. Thus my experience concerning an object may begin with the haziest outlines and gradually develop into an articulate picture with a sense of ever endless possibilities of impressions and suggestions ringing in it. Suppose thus an experience begins with $Pt_1$ and ends with $Pt_n$. Now, which of these successive pulses of experience shall I put down as my experience of the object? What is true in the case of an impression is also true in the case of an idea. When I have an idea concerning an object and cherish it for some moments, are we to suppose that the ideal picture remains for all the time statically and unrelentingly the same? Does not idea too, whether memory or expectation, commonly begin to appear as a chaotic mist, and then gradually form itself into a veritable cosmos where the Muses love to sing and Philosophy is proud to dwell? The growth of the Fact is indeed the birth of the World, and undoubtedly the chaotic mist in experience in which perceptions and ideas are born has set lessons to the primordial nebula amidst which the chorus of the heavens is supposed to have slowly thrilled and awakened.

Hence when a fact A is potentially present in the apprehension of the fact B, we need not suppose that it must be present, if at all, as a completely given suggestion or as a distinctly pronounced possibility. As a matter of fact, A may gather round B as a soft, almost impalpable halo, exercis

ing the influence of its presence as a sort of un-suspected guardian angel, not yet caring to disquiet the complacence of the favoured fact under its wings, not yet driving thought into an exhibition of logical categories. The statement, therefore, that 'A is present potentially in B' ought to be taken somewhat liberally : A may be present along -h B as a rival term of a process of judgment ; it -y be there as a pronounced but not sharply -criminated feature in the representative struc-re of B, as the smell of a rose only seen from a -stance ; or it may cluster round B as a sort of -al mist, neither pronounced nor discriminated, - none the less forming a part of the concrete -perience of the moment.

Without pausing any longer over mere ques--ns of detail, let me at once proceed to give in -ad outlines the main features of the theory of -ct which it will be the task of this essay to -tablish and explain. I shall be very brief here.

(A.) For me Existence means concrete, conti--ous experience. It is the Fact-Stuff which, -ugh intuitively given, absolutely refuses to sub- -to a logical construction : it is life and no talk. -en the equation $F' = U$ cannot apply to it in its -reteness. The Fact-Stuff, however, is not un--owable on that account. On the contrary, its very essence lies in presentation in consciousness. It is alogical.

(B.) Every Fact-stuff ( consistently with my principles I cannot even speak of it distributively )

is immediately given as an infinite continuum. My experience regarding an obscure star, for example, at any moment is not exhausted by the star, the portions of the firmament immediately surrounding it. It is an infinite consciousness or awareness especially emphasised at a star, and practically taken as exhausted by, and equivalent to, the star. Consciousness or awareness is always infinite in the sense that it necessarily extends *beyond* all limitations of Time and Space and all other categories of existence. Conceive any bounds, however large and wide, of Time and Space, and your awareness is necessarily and distinctly *felt* as extending beyond them : all limits exist *in* consciousness, and even determinations that are supposed to lie outside of consciousness are *in* it. The Fact-Stuff is a condition of this boundless awareness. This infinite continuum is ignored and mistaken, because my interest is commonly pragmatic : through ignorance therefore the Fact-Stuff appears as bound and contracted : but for the substitution of the pragmatic fact for the concrete fact, I would perpetually live in the Infinite in thought as indeed I always live in it in feeling. The Infinite forsakes me in my dream, it is inalienably with me in reality. The relation that comes very near to the mystery of existence is given by the equation (2), *viz.*

$F' = I\frac{f}{1}$ First waking up to itself the Fact-Stuff knows itself as an unspeakable wonder (U) ; next, it is revealed to itself as an infinite continuum

sustaining a finitely apprehended structure and thinking itself as a unity in the midst of a manifold $(I^f_1)$. How did the seers of the Vedas conceive the *Brahman* for example ?

(C.) I need not dwell here on the polarised fact, but shall proceed at once to my theory of fact-operation. The theory, conception or thought about how fact operates cannot by itself be a whole concrete experience ; it finds its place in the index of a polarised fact. Thus in propounding any theory, good, bad or indifferent, I am necessarily confined to a snug, little dream-world : theories I must dismiss or subordinate when I must live the Fact itself. With this note of warning in mind let me conceive an infinite continuum. Is this moving ? Consciousness or awareness can indeed be supposed to move from point to point, and feature to feature. But is this really a movement of awareness *as such*, or of the emphasis of awareness ? There is not commonly an uniform distribution of the intensity of awareness over a field or continuum ; so that awareness of a *certain* intensity is a directed quantity and may be imagined to change its direction. Perhaps it is not quite correct to speak about the intensity of awareness ; and though I fear I shall be accused of the vice of abstraction so obstinately ingrained in the Asiatic intellect, I make bold to say, in contravention to what I have said a moment ago, that what is variously distributed over a given continuum of fact is

not consciousness which is scrupulously impartial, but what I have often before now vaguely described as psychic tone. This psychic tone with the involved question of the distribution of awareness over a field will come up for treatment in a later section. Let me maintain in the meanwhile what I am perhaps warranted in maintaining that what appears to *move* in the continuum is not awareness as such—the all-pervasive infinite which excludes no category of existence whatever could not be *known* as moving even if it were really moving—but *the sum of fact-sections* including the pragmatic fact. It is, in other words, the index of the $F_1^f$ which is known to move; consciousness as such cannot be conceived as moving; the concrete continuum or Fact cannot be in itself known as moving; it is known as moving in reflexion (index).

(D.) Philosophy has lately developed a tendency to look upon consciousness as a mere *function* of experience: the Philosophy of unconscious ideas and mind-stuff would even go so far as to regard it as a mere accident of mental process. I have however suggested it as a boundless *plenum*, a sort of universal spiritual ether, which sustains and illumines all experience and all processes in the continuum of experience. It is not something other than the Fact, but is the very element in which the Fact lives, moves and has its being. I shall not press this consideration at this stage. Let us rather take the. continuum of experience as

concretely given to us. Keep back all practical interests and special preferences, and take the fact unreservedly as it comes. Does it appear as a bound and restricted phenomenon ? If so, how do we know it as such, and what lies beyond its bounds ? I prefer my appeal direct to intuition. Nothing can be known as bounded whose bounds we do not in some way transgress in the very act of knowledge ; for example, it is impossible for me to conceive that the soul perishes with the body without my being an witness to the act of perishing in imagination, thus outliving the act at least ideally. Similarly, my continuum of experience exceeds all limiting definitions, however wide, that I may set to it : it is wider than my widest survey of it. Is it exhausted by the tiny star at which I am intently gazing now ? No. Will the addition of the surrounding strip of the sky make it complete ? No. What if I add my organic sensations ? The indistinctly apprehended sounds, odours and touches, the lurking memories and peeping hopes—will these make the story all told ? Not yet. What extends beyond these gradually fading zones of the continuum I cannot indeed say ; but assuredly too my actual experience does not terminate at the point up to which I can carry my account. Consciousness need not stop with my account. Now, this indefinitely extensive continuum of experience is ordinarily always in a state of agitation, stress. Like the heart of an ocean it is always uneasy. Analogous is the

savant's conception of the ether : it is ever alive with the countless thrills of matter and life. The continuum of Fact to which nothing is foreign, which is *my* existenee in all its dimensions and richness, is alive with the primordial agitation in which all matter, life and thought are born, live and decay. I call it 'primordial' because the physicist's agitation of matter and medium and the biologist's agitation of protoplasm which, if we could only respond to the invitation of Prof. Huxley, would render the noonday silence of a forest into the colossal music of a sea of life, are but consequences and illustrations of the stress in the concrete and comprehensive fact of experience of the Spirit.

(E.) As a result of this primordial agitation or stress in the Fact we have, *first*, displacement of special imbedded feature in the continuum which means not that actual fact-sections move from certain positions of Time and Space to certain others, but that they spring into and pass out of existence. This will perhaps conflict with the idea of physical displacement : in physical continuum or medium objects and particles are supposed to move actually from certain positions to certain others. But the discrepancy is only apparent. When in a medium a particle in the position A has been displaced to D through the intermediate positions B and C, it is only through pragmatism and abstraction that we believe that the particle as it was at A is identical with what it has successively been at the positions B, C and D. But surely a real entity cannot

remain identical or unchanged by exchanging one real configuration for another. True ; but has not *something* moved from the first position to the last ? The Sophist's denial of motion altogether may be taken seriously or lightly ; but on my own part I have no hesitation to confess that motion and displacement as we commonly believe them to be are a standing perplexity to me. It will perhaps be in keeping with radical empiricism to give the following account of displacement : Suppose I am attending to a moving particle for a few minutes. Let A, B, C, D be the different positions of the particle. Can I not say that in my given continuum of experience four distinguishable but closely similar features have successively appeared and disappeared, and that though not absolutely identical they are practically believed to constitute but four different positions of one and the same particle ? Of course such an account will not allow us a peep behind the scenes so as to enable us to see what precisely is the meaning of successive appearance and disappearance of distinguishable but very nearly indentical features in a given continuum of fact. The categories 'distinguishable' and 'identical' mutually exclude. If A is distinguishable from B, it cannot be identical with it ; if A is identical with B it cannot be known as other than B. It is again through pragmatism and abstraction that distinguishable things are taken as also sometimes identical, and *vice versa*. Be that as it may, I conceive the primordial agitation in the continuum as involving

the appearance and disappearance of features or, as I have called them, fact-sections. *Secondly*, it also involves the propagation of an wave of conscious activity which may be called regard or attention over the given continuum : this aspect of the agitations does not require, as I have already pointed out, the actual translation of the fact-sections of a continuum ; but it means that as the wave passes, the hollow, the slope and the crest of the wave are occupied by successively different elements of the continuum. I shall not discuss here if we really require to break up the agitation into *two* such components, one involving the absolute appearance and disappearance of fact-sections, and the other involving the successive appearance and disappearance on the crest of the wave of regard of *given* fact-sections of a continuum. I have here put the two aspects apart because I conceive that the difference between them is readily understandable.

(F.) Now, what can be the simplest expression so far as we can go of this primordial agitation? Let us imagine the continuum again. As new fact-sections are coming and going, the fact itself may be conceived as moving in a certain sense. It is like an World-stream gliding ever merrily on. The wave of regard or attention is also moving down-stream. With this picture fixed in our mind can we not assign a fundamental law to which all this process, all this fact-operation, conforms? Primordial agitation in experience is, it should be readily perceived, only another expression for what

I have so long described as fact-operation. Now, as dimly suggested before, the fundamental form of fact-operation is *pulsation, ebb and flow, periodic reversion.* The agitation has been resolved into two aspects: the agitation of birth and death of fact-sections, and the agitation of lighting and shading, emphasising and ignoring, toning and detoning of fact-sections. The one aspect explains the antithesis 'to be or not to be': the other aspect has to do office for the opposition 'to grow or to wither'. For example, a dimly attended feature in a continuum *is* quite as much as a fully attended one; nevertheless the distinction between the two features is a most interesting one; indeed life cares most not for the mere *kind* of having but for the *degree* or tone of having. Now, whether in the one aspect or the other, the agitation is not a pure, unmitigated rush in one way. It is in the nature of a stress in which action in one way is sought to be balanced by reaction in the opposite. Suppose we designate by the term 'Strain' the change of form—using this word in a most comprehensive sense—which the continuum undergoes under the influence of a given agitation. But is the agitation or stress ever of a constant nature? The strain of a continuum is not always uniform, hence the stress behind it cannot be supposed to be uniform; again, the resultant stress of an experience is a matter of direct feeling, and as such it is known as continuously changing. Now, by pulsation or periodic reversion I mean this that the stress, and

consequently the strain, of a continuum has a *tendency* to assume periodically the same value. If $u$ be a function of $x$, and if for the values of $x$, *viz.*, $x+a$, $x+2a$, $x+na$, or all values of $x$ differing by $a$, $u$ assumes the same value, then $u$ is called a *periodic function* of $x$, $a$ the *period* of the function In our present case we do not know what $a$, the period, may be; but we do know that the stress (which name I apply to the total state of agitation of the continuum), and consequently also the strain (which name I give to actual configuration of the fact-sections in a continuum at any moment), has a *tendency* to revert to the same values (what values I do not however pretend to know). This phenomenon I desire to call periodic reversion. Under certain definite and symmetrical conditions this phenomenon becomes what Kelvin and Tait have called Simple Harmonic Motion. Suppose we define the *elasticity* of the continuum at any moment by the ratio $\frac{stress}{strain}$, where 'Strain' means the relative displacement of the features of a continuum under the influence of an agitation, and 'Stress' means the tendency of the continuum to revert to its former state—the restoring tendency; let this $=e$. Then, can we say that $e$ has a tendency to assume periodically the same value? Here we are speaking about the ratio of two magnitudes and not about the magnitudes themselves. But none the less I am inclined to think that the principle of pulsation or periodic reversion applies to the strain and stress of a continuum and therefore also to their ratio.

the fact has a tendency to possess the same elasticity periodically. In the above considerations, the terms 'Stress' and 'strain' have not been used in consistent senses throughout; but I have given my definitions in each instance.

(G.) The agitation has been described as a stress which implies that it is at least a double-sided affair. In its essence it is a sort of constraint, and hence cannot be a purely one-sided activity. A purely one-sided activity is metaphysical pure action to which Newton's physics of action and reaction does not apply. The state of constraint in the dielectric medium has indeed been made quite familiar to us by Faraday's curved lines of force and the Maxwell-Hertz theory of electric disturbance; we now courageously apply this view to the study of the Fact itself. This indeed is not a physical interpretation of Philosophy: the continuum being the world of experience itself must set models to which the more or less abstract sciences of Mind, Matter and Magnitude must conform in their own way. Now, the state of agitation in the continuum presupposes that at every point of time there is *both* flow in one direction and flow in the reverse: at every moment there is a forward dash accompanied and conditioned by a backward swing, and it is the resultant of these two activities which determines the *actual* progress, one way or the other, of the continuum. Ever new features appear and are illumined and no appreciable thought is lost in comparison and recapitulation when the forward sweep

greatly prevails: we merely skip from perception to perception or from idea to idea without much looking back, pausing to compare notes and take stock of experience: but even in such cases the backward reference of thought is not wholly in default: the present feelings and ideas are recognised and understood only in the subtle atmosphere of dimly suggested ideas. When the backward sweep prevails we have not as before a continued presentation of new features but a representation of those that have been already presented in the continuum. Suppose, *first*, I have a continuum that appears to be extended in space: it is to be observed, by the bye, that Space, Time and other categories are inside and *not* outside of the continuum of Fact, so that I cannot properly speak of a concrete fact in space and time, but - I hope usage will forbear laughing at me—space and time in fact. Now, what will backward sweep in the continuum mean? It will mean commonly that the regard-movement AB becomes reversed or BA It is not the concrete fact that moves, but a particular fact-section, *viz.*, attentive regard in relation to two other fact-sections, *viz.*, A and B. At any rate, we think and believe that *this* moves. Again, my regard remaining constant in magnitude and direction, a fact-section A in the given continuum is altogether put out and a new one B appears. Suppose we distinguish these two states of the fact by $C_A$ and $C_B$. The latter is a later state. According to the view that we have proferred $C_B$ will

have a tendency to return to $C_A$ : the periodic law, if any, relates not to the passion for going and returning as such but to the relative proportion of the passion for the one and that for the other : now the one is waxing and the other waning, and then reverse becomes the order. Thus, *secondly*, if we imagine a continuum extended in time, the reversion from B to A will mean not the return of regard from one fact-section to another both of which are however actually given in the continuum at the same instant : they are $E^A_{t_n}$ and $E^B_{t_n}$, where the indices do not stand for emphasised features but merely presented features whether prominent or obscure. It will mean the return of regard from a present feature to another which is believed to be not present along with it. As a matter of fact, however, two fact-sections can be regarded together only by being brought together in thought, though they may well differ in tone or virileness of existence and referred to different axes of Time. When $C_B$ has a tendency to return thus to $C_A$, the latter becomes potential in the former ; this potential under certain conditions will mean the recalling of $C_A$ in clear idea or even in explicit judgment.

(II) Helmholtz showed that vortices cannot be produced in a homogeneous, frictionless and perfectly elastic substance, and that if they are produced anyhow they cannot be destroyed either : a foundation upon which Lord Kelvin reared up

his fascinating vortex theory of atoms. The continuum of Fact is concrete existence of which the ether of the savant is only an abstraction: vortex and rotational movement *can* originate in the continuum and *can* be dissolved: we need not invoke supernatural agency either for the one phenomenon or the other in the continuum of experience. Now, what we ordinarily call a substantive part of experience represents such a vortex and rotational movement in the continuum The primordial agitation in the continuum does not consist, as we have seen, in pure rush in one way periodically *followed* by a pure rush in the opposite: the flowing *on* and the turning *back* are simultaneous and ever continuous operations, though of course their relative strength is subject to periodic variations. Generally, the onward flow which introduces ever new features into consciousness prevails: the fact is always changing from $C_A$ to $C_B$, and from $C_B$ to $C_C$, and so on. Nevertheless at each point of time the restoring tendency is active. Though experience can never repeat itself, and a fact can live but once in consciousness, we need not suppose that the flow of existence is a pure, unrelenting dash in one direction: it is always flowing in one direction, *viz.*, in the direction of ever fresh appearances—we can never actually return to the self-same perception or idea; but also there is always in varying degree a *tendency* to return in the continuum of fact. What I have described as the prevalence of the backward

values at least one minimum value must appear, and that between two minimum values at least one maximum value must come. Here lie the germs of periodicity: the ebb and tide, the pulsation in the life of the fact. It should be observed however that the foregoing obvious principle of maxima and minima is not the cause and basis, but the consequence and expression of the primordial ebb and flow in fact. That two maximum or minimum positions of the curve must be connected by minimum or maximum positions, is a proposition that follows readily from the principle; but let us ask the following two similar questions:

Why should there be *two* maximum or minimum positions of the curve at all?

Also why should a curve pass at all from a decreasing to an increasing state and *vice versa*, and not become in all cases *infinitely* increasing or decreasing?

These are metaphysical questions which can be set at rest only by looking into the foundations of the life of the fact. Alternation, periodicity, reciprocity are the ultimate propositions of this life which account for the reciprocal maxima and minima of calculation and the rhythms and harmonics of abstract analysis.

Now, suppose $t'$, the relapsing impulse, assumes a maximum value; what will become of the resultant activity of the fact? In the face of a former equation we cannot indeed suppose that past facts in the history of experience will actually reappear:

the forward trend still prevails on the whole. It will mean that experience will be mainly referring back, representing——remembering, judging, and so on ——with its emphasis distinctly placed in its index.

Now, we have dealt at some length with the relative dispositions of the two tendencies. Clearly, what we have sometimes called a substantive part in experience is a travelling eddy in the continuum of conscious existence caused by a particular mutual disposition of the two tendencies. A substantive part, *e.g.*, my relatively steady perception of the cloud, is not a statical fact—it is moving, changing and growing. It is my pragmatic interest that has taught me to take a perceptual object of some moments' duration as absolutely one, identical object. The experience is one and continuous no doubt; but if on reflection I find it to be a sum of any number of fact-sections, these fact-sections ought in no case to be regarded as absolutely identical. To take them as identical, to fancy that I am having the same pulses of experience for all this period, is a convenient abstraction of life which is grimly practical, is what I may call one of the commonest *illusions of pragmatism*. But though the fact is moving, it is also steady in an unmistakeable sense: to be and not to be are curiously swept together in the life of the fact, and of these two aspects of the process the pragmatic emphasis is laid almost always on the former: hence the illusion of a steady, statical perception. I have

however, likened a substantive part of experience to an eddy travelling down stream: I look at the eddy itself; it strikes me as a centre of a certain unity, individuality, permanence and agitation; does not my cloud also strike me in a similar manner? Is not a substantive experience too regarded by me as one, individual, relatively permanent and in a condition of stress? I look at the stream itself——the larger object of which the eddy is only a small, especially interesting feature; it strikes me as a continuum bearing on its bosom a chequered agitation and flowing steadily one way. Verily, here I have the aptest symbol of Life. The continuum is larger than what I may circumscribe as its substantive part, and I feel this continuum moving, carrying eddies and waves along with it. The eddy, as I have suggested more than once before, is called into existence by a certain mutual disposition of the two continuous but periodically variable tendencies.

The eddy in the continuum of experience will naturally be the prototype and original of all kinds of eddies with which the universe has been stocked by human feeling or imagination. The vortices of Kelvin are certainly an improvement on the mathematical points of Boscovich: the atoms are supernaturally created, indestructible vortices in an abstract, all-pervading substance that has passed muster as ether. The ether, however, is only an *aspect* of the boundless continuum of fact which is man's universe itself: the ether is only *an* element

of such a universe: the ocean *minus* its stress is under all ordinary circumstances an abstraction, the ether *minus* its stress is also under all ordinary circumstances an abstraction; and ether *plus* its stress constitutes in the eye of Science the physical universe which also is an abstraction —— a grand fact-section and not the Fact ——, though one step less removed than mere ether. The ionic constitution of matter and the investigations of Sir William Crookes have robbed likewise the classical atoms of their inert and ultimate character. Moreover, we have also received the invitation of Huxley to hear the music of the noonday forest raised up by the rotation of protoplasm in the countless, microscopic vegetable cells of the wood.

What does 'movement' mean as attributed to the continuum of fact? Obviously the conception of movement cannot be applied to the fact-stuff itself. To conceive that a fact moves I must go beyond it, make an object of it: nothing can be supposed to move which does not divide existence or experience with something *else.* Hence the entire experience which involves the thought of a moving object cannot itself be supposed to move. The moving fact is a fact-section and not fact-stuff: it is an element of experience and not the whole of experience. The dynamical view of fact which I have been lately expounding does not therefore touch the fact-stuff itself: there is no theory of the fact-stuff. But though the fact-stuff can never be transcended and therefore thought about, the

fact-sections or the elements of experience can undoubtedly be. Hence there becomes possible a Science of the Fact. We surely do not know whether the infinite ocean of awareness is itself moving or is at rest; but the waves and eddies——the fact-sections as I have called them——do move: they appear and disappear, wax and wane. Nay more: if we conceive the continuum as the sum of the fact-sections discriminated therein, we may say that even the continuum moves. The stupendous system of heavenly bodies is imagined as moving *in* infinite space: but can we imagine infinite space as itself moving? No. Time is indeed conceived as flowing: but what is it really that flows? To my thought, Time abstracted from all ordinary determinations is an infinitely extended scheme in which phenomena may appear: it is an order which makes phenomena appear as a series, just as Space is an order which makes them appear as a special kind of configuration. But I do not conceive either the one order or the other as essentially moving. If Space moves, it moves in an wider Space, and this again in a still wider, and so on. But what will infinite Space itself move in? Similarly, the flow of Time presupposes Time, and this in order to flow will require Time again, so on. Hence the flow cannot pertain to Time at all: it is the phenomena which are thought to have a certain order or scheme of distribution which we have agreed to call temporal. This order or scheme as such does not move. Does the future

*as* future become either present or past? The future *object* may come and go: but does the aspect of the temporal scheme called future ever cease to be so? Future, present and past are ultimately certain general attitudes of my experience: each means a certain direction and character of experience. These directions and characters of experience are unmistakeably distinct. At the present point of time, for example, each aspect of the temporal order, future, present or past, is distinctly given: none is merged or lost in the others: none can vanish leaving the others alone in the field. Time is always standing in my thought with all its aspects distinctly given: when a phenomenon is presented in these aspects it is regarded by me as a flowing fact with a history.

I have already suggested Consciousness or Awareness as a boundless, permanent plenum in which modes or states appear and disappear, grow and wither. I cannot see my way to regarding it as a mere function of experience. In some of the later sections it shall be treated with more becoming fulness. At this stage, I shall observe that Fact or Experience is an inconceivable abstraction apart from consciousness. The actual fact is conscious existence. Hence in dealing with fact or experience I have made no separate mention of consciousness: the fact presupposes it, lives, moves and has its being in it. Now, at every moment I am not infinite awareness merely, but infinite

awareness finitely determined or $I_1^f$ according to our symbols. Thus my fact is equivalent to, in reflection or representation, to $I_1^f$. Now, can this infinite awareness finitely informed be conceived as moving? No. The difficulties which overwhelmed us in the case of Time and Space will be here also even more formidably. Surely we cannot conceive consciousness *as such* as moving, though of course tones and determinations of consciousness can readily be known as changing and shifting. Any thing *in* consciousness, which is not also thought to be infinite, can be conceived as moving: but consciousness including its modes cannot: and is not this latter what we have so far called fact-stuff? But suppose, as suggested before, I give the name continuum to the totality of finite fact-sections or determinations, the sum of the modes —— a sort of *Natura Naturata*. Now, can we not regard such a continuum as moving, although the live, entire fact may baffle all our computations and exceed all our categories? Such a definition as this will lift our dynamical theory of experience from the quagmire of metaphysical confusion. Without some sort of abstraction, experience or fact is, as I have repeatedly urged, dumb, alogical and absorbing. No *theory* will dare to stare it in the face. Philosophy begins by cutting up the actual. Science is born in nescience.

The movement of the continuum should not be confounded with physical displacement or motion. This latter presupposes both Time and

Space: the movement of the totality of fact-sections or of individual fact-sections requires Time and Extensity. In mental life, we are familiar with the extensity of experiences: experiences are intuitively known by us as more extensive or less. This primordial extensity forms the basis of, but is not identical with, Space. Space is a special manifestation of extensity. Hence physical displacement is only a special kind of fact-displacement.

### 9. *The Veil of the Fact.*

A substantive or relatively stable part of experience may be represented by either of the two symbols $[E]^{p_n}_{t_n}$ or $F^{f}_{1}$. Let us rather take the latter Thus experience at any instant is an infinite consciousness which determines itself in a finite feature or features, and maintains a character of unity. Now, the question that arises is this: why do we seize upon the finite feature or features, and apparently ignore the boundless plenum in which they appear? Even in the realm of the features or fact-sections themselves, our interest is partial and selective: with respect to one or a few we are at home; with respect to the rest we are not at home though they might knock at the gates of consciousness. All are above the threshold of consciousness, however. In becoming partial to a part or section we cannot really cease to live the whole in consciousness: the whole never sink

below the conscious level. But nevertheless the whole may sink down to a minimum tone of presentation. As the favoured section mounts up the curve of presentation, the entire presentation, though undoubtedly given, becomes apparently ignored. I fancy that the part is the whole experience at the instant : thus is born what I have called the pragmatic fact. I have already hinted that an experience of a given instant can be split up into three aspects : the infinite plenum of awareness (say, I), the sum of finite features or fact-sections (say, $S f_s$), and the selected and emphasised feature or the pragmatic fact (say, $f_p$). Then the fundamental fact to note in the life of experience is the apparent subsidence of the first in favour of the second, and the apparent withdrawal of the second in favour of the third. Why should the whole wane in order that a part may wax in respect of tone of presentation? Why should a larger part sink to a minimum of presentation in order that a smaller part included within it may rise to a maximum?

Let us for one moment consider the bearing of this question on the view of fact-operation that we have so far proferred. Suppose I once address myself to the task of following as a whole my experience of the present instant, eschewing for a while all lay practical motives. I have surrendered as far as practicable all special preferences and partialities. As I gaze up in a mood of complete abandon into the clear, tranquil sky overhead, I

undoubtedly feel my experience to be an unbounded presentation : there is the genial flood of morning sunshine to which no bounds I can set ; there is the lively chorus of the birds and the rustling of the leaves——an experience of sounds to which also it will be arbitrary to assign any limits ; there is a boundless presentation of smells too arising from leaves, flowers, blossoms and sundry other things ; there are besides hovering echoes and shades of memories and suggestions ; and we must not forget to mention the vague, massive, organic sensations which our fleshy existence is at every moment heir to. It may be poetry to express each of the various aspects of experience, sight, sound, smell, and so on, as a boundless continuum : but will it not appear to unsophisticated reflection that each aspect of presentation is very much larger than I commonly take it to be : do I not see, hear, smell, recollect, and otherwise feel enormously more than I commonly fancy that I do in a given moment of experience ? But though I may have doubts as to the actual infinitude of the several *aspects* alluded to, I feel that I cannot doubt the limitlessness of the entire, concrete experience of the moment : this at any rate is unbounded, being my entire universe itself for the given moment. It is to be represented, as explained before, by the equation $E = I^{f}_{1}$.

Now, my universe of fact is ever moving. 'Movement' as before will have to be taken in the sense of the appearance of ever new fact-sections and the

disappearance of the existing : the existing order of things in this universe is continuously giving place to a new : the same sights, sounds and smells do not permanently remain. This movement, as I have also suggested before, is not a *simple* onward process : it *is* an onward process on the whole but at every instant it is sought to be counterbalanced by a retreating sweep : at every instant there is a varying tendency for past presentations to reappear, and for existing presentations to withstand the fatal disposition to disappear. Now, since the onward dash generally prevails, past presentations can never actually reappear, but nevertheless they can become 'potential' in new presentations, in which case we are to note two distinct varieties : Either the past may reappear in the present as a scarcely discriminated ideal halo with the accent of the moment laid decisively on the intuitive or presentative basis——in a case like this the fact passes for a new phenomenon ; or the past may be given in the present as a distinct idea with the emphasis of the moment placed on the index rather than on the base of the fact ——in a case like this the fact passes for a revival or representation. What again is the disposition of experience when I feel that I am having identical or similar presentations for a few successive instants ? So-called identical or similar presentations will be explained partly by rotational strain in the continuum of experience as I have more than once suggested before, and partly perhaps by

the action of Force or Forces pulling the wires of man's life of experience from behind the scenes. I am not quite sure, however, that this latter is not an unwarrantable suggestion. Up to the present juncture I have given my account of the fact without ever having occasion to venture out on the debatable ground of the Unknowable or Inscrutable: the fact itself has been for us sufficiently inscrutable to satisfy our most insistent predilection for mysticism. But do we really require to bring in the Unknowable from behind the scenes to account for similar experiences? If we do, why shall we not invoke the same Mystery to set its seal on all other fundamental propositions of our creed of empiricism, *viz.*, the movement of the continuum, the general prevalence of the positive movement, and periodicity in the dispositions of its two components? But while I must not be betrayed into metaphysics at this stage, I shall not mince matters either. Similarity as well as difference are categories of our existence which we cannot explain as derivatives from more ultimate roots; though of course, we can within certain limits, find more or less precise statement for them. We cannot explain why similar pulses must come in the life of experience any more than we can explain why dissimilar or new presentations appear. The fact is there and we must accept it, though we may not feel our way to go behind it.

We have also supposed that existing presentations have a disposition to withstand the rush—

the tendency to disappear. There is a certain inertia in a presentation which must be overcome before it can be made to vanish and give place to a new: this explains the *curve* of a phenomenon —the circumstance that it grows and decays. The fact *is* in a certain sense in ceasing to be: this is its *becoming*. Can the becoming of a fact be fully explained as purely a case of appearance of new fact-sections and disppearance of the existing? Is the assumption of fact-inertia, or for the matter of that, fact-spontaneity a necessity? If a growing fact is but a series of vanishing new presentations, what is it that constitutes its difference from an ordinary series? I submit that in order adequately to explain the growing fact we have to make two additional suppositions besides the movement of the continuum.

In the *first* place, we must concede to every presentation or section of presentation what I have called a moment ago inertia or spontaneity. But are not inertia and spontaneity commonly accounted to be opposite virtues? Yes, but the opposites meet in the life of the fact. No fact can be charged with absolute inertia, and none can be charged with absolute spontaneity. A fact is inert in the sense that the circumstances of its history lie to a considerable extent outside of itself: it is partly determined by facts other than itself. Matter is only an aspect, an abstraction of the fact; and in so far as the movement of the fact is determined by conditions supposed to lie outside of itself,

Newton's classical Laws of Motion apply. Again, a fact is spontaneous in the sense that to a certain extent at least every fact is the author of its own history: its whole behaviour cannot adequately be explained by circumstances external to it alone. Philosophers have claimed spontaneity, even selective spontaneity, for the cells and centres of the organism: Leibnitz substituted for the inert atom of traditional physics his classical monad whose very essence he placed in activity: modern Pluralism too has invested its individual existences with spontaneity. But the fact possesses the nature of both the atom and the monad. Life is only an aspect, an abstraction of the fact; and in so far as the behaviour of the fact resembles the behaviour of the organism, Newton's Laws of Motion do not apply. We need not dwell on this aspect of the question just now, but we observe that the relative inertia or relative spontaneity which the fact possesses makes it obey and yet withstand the sweeping processes which we have so far assumed on the continuum. And I submit that this is one circumstance which makes the 'becoming' or growth of the fact possible.

In the *second* place, the growth of a fact in experience does not appear to me as possible unless we also recognise the following operation: *Veiling of the whole and accentuation of a part: unveiling of the whole and relaxation of the part: oscillation or alternation between these two aspects of the operation.* There is periodicity attending

the circumstances of the inertia or spontaneity of the fact: if a fact has been growing for some time its inertia or spontaneity for this time may be represented by a curve with maximum and minimum positions. There is also periodicity—and even rhythm as I believe—attending the circumstances of the operation just alluded to. Suppose I have at this moment a perception of a tree. In the concrete fact, the subject, the object, and all other elements which we may subsequently discriminate, lie blended together. Now, how does the phenomenon grow apace? The concrete fact is veiled for one moment, and a special fact-section rises into prominence and is apparently detached: This indeed does not mean that for the moment the whole actually sinks below the level of consciousness—let us adopt this convenient fiction of Herbartian psychology—and the part or feature alone absorbs my whole conscious being: this is impossible. Veiling refers only to a sort of detonation or blurring of the whole, and not certainly to its effacement. On the other hand, the detachment of the part is only apparent: a part can never actually cease to live in the whole. As a particular fact-section is lighted up, the whole fact itself is thrown as it were into the shade. None the less, however, the whole continues to sustain the part as a vaguely apprehended background: it may subside but it cannot go: I can ignore it but not efface it. Thus as I am perceiving the tree, the subject may temporarily press itself into

notice and eclipse the whole fact of the moment; yet the whole fact of the moment cannot cease to be: the subject as engaged to a tree is not the same as the subject feeling its way through 'Creative Evolution.' Even the ignored dimly apprehended environment of feelings vitally matters. But if the tree of perception is to grow, the subject must not attend too much to himself. There must forthwith be a relapse of the whole and subsidence or relaxation of the just prominent part. After the whole has been unveiled for an instant and lighted up, it is again veiled and shaded, and the potential of another part, this time the so-called object let us suppose, goes up. In this way the picture grows. Now, what is true of the tree of present perception is essentially true of the whole universe of fact which, by the bye, has been compared in the Vedas to a Tree of infinite dimensions. There is a distinct sense in which my world of experience itself grows—I have myself previously supposed that it moves. If it grows, it must grow by just the same periodic veiling and unveiling of the whole and part as renders the growth of a plant or a crystal possible in knowledge. Experience, though never actually retiring behind or beyond the light of consciousness, lives and moves under a colossal veil: which while making experience not unknowable makes it unthinkable. What imagination will dare to lift this veil, what inspiration and vision will make experience the full, concrete, actual existence

*taken as such?* The veil renders the Fact prag-
matic fact.

The meaning and metaphysics of the Veil I may go into in a future volume. But two questions have to be met in this preliminary statement of the loctrine of Mâyâ or the Veil of existence.

*First*, do we not in the development of an experience pass from one pragmatic fact to another, and from this to a third, and so on? Does the ole ever ordinarily become unveiled and lighted in the progress of this development? The pparent movement is of course from one prag-atic fact to a second, and from this to a third, nd so on; the very circumstance that they are iken as pragmatic makes them the principally ttended and selectively emphasised portions of the owing continuum. These constitute no doubt the indmarks in the history of the process. But the ragmatic portions do not make the flowing conti-uum any more than the landmarks make history. is surely possible to read between the lines ich at first alone appear to strike the eye. Sup-se I am occupied by a certain pragmatic fact for me time. Is the experience statical, motionless r this time? It need not be. While I think I n busy with a given pragmatic fact, I feel that ere is from time to time an alternate veiling and veiling of the concrete fact corresponding to and staining the pragmatic fact: there is periodic ppearance and disappearance in explicit cons-iousness of $f_c$ and $f_p$, to utilise our proposed

symbols. We must pause to make an appeal to immediate consciousness to verify if this account tallies with actual experience or not. The mother and her child, the whole and the part, the indefinite and the definite, play hide and seek, fast and loose with one another. My own feeling is unerring on this point. For one moment, in a case like the foregoing, consciousness becomes contracted, concentrated in a focus, as it were, and this means the birth of the pragmatic fact; at the next moment consciousness again expands, stretches itself, as it were, with an almost impartial distribution over a continuum. Such periodic contraction and expansion of the fact—if this physical description of a phenomenon not at all physical may pass—is to me a matter of direct feeling. Again, when I am supposed to be passing briskly from one pragmatic to another, and from this to a third, and so on, the concrete whole is not wholly in abeyance: every now and then during the passage of this drama it is making itself supremely felt: very often the scenes find themselves merged in the acts, and the acts in the play itself: frequently has the whole gathered into its embrace the apparently stray and unruly parts. The importance of such an operation in the economy of knowledge is not slight. Unless the whole has opportunities of flashing itself from time to time on the mirror of consciousness, the significance of the parts themselves will be wholly or partially lost. No part is ever understood as part which fails to exhibit its dependence on

whole; and if the part were to appropriate consciousness always and the whole never, how would the part exhibit its connection with the whole in experience at all? Hence the supposed uninterrupted flow of experience from pragmatic parts to pragmatic parts without any brief interpolations of the whole or wholes, would really spell the ***reductio ad absurdum*** of human experience. I venture to think, moreover, that there is a fairly rhythmic law presiding over the veiling-operation of concrete existence. Here I shall merely suggest, however, that the rhythm of the veiling operation in us roughly corresponds with the rhythmic expansion and contraction of our organism in the respiratory process. It is a suggestion which I do not propose to follow up and work out at the present stage. I may have to return to it in dealing with the ways and means of mysticism.

*Secondly*, we address ourselves to a more serious question. How can the periodic veiling of the fact coupled with such movement as we have ascribed to it, and assisted by its essential character of spontaneity, explain the flow of experience in the boundless illumination of consciousness? Movement and veiling, it must be noted, are the two grand aspects of the operation; spontaneity and consciousness are the two fundamental expressions of existence. It would be advisable to carry on this investigation on more rigid lines.

To begin with, mathematical and physical 'whole and part' must not be allowed to get mixed

up with the 'whole and part' of the Science of Fact. The former whole can vanish without requiring its component parts vanish distributively also. The algebraic sum of some quantities may be equal to zero without any of the quantities being zero: the sum of a number of coplanar vectors forming a a polygon may be equal to zero when these are taken in a certain order, but that will not evidently make *any* of the vectors equal to zero. Mathematical physics will complacently act upon the equation $+e-e=0$, where the two factors stand for equal and opposite kinds of electricity. But we ask Can a fact-whole also vanish similarly without requiring *any* of its parts or components to vanish too? The answer, it must be at once admitted, is negative. In experience actual fact-sections cannot be supposed to cancel one another and show a net result of zero like quantities, vectors and forces in the mathematical and physical sciences. The fact-sections are elements of experience—presentations; but like Herbart's presentations these cannot be supposed to eat up one another and vanish in the bargain.

But suppose we place a somewhat different construction on zero. Let this stand for not the vanishing or annihilation of the whole or the part but their maximum veiling, shading or ignorance. As we shall see, the veil or shade of existence is not a homogeneous and uniform feature. It is not merely a question of veiling and unveiling, but also ordinarily one of more or less veiling. Now, le

us put down as equal to zero a whole which, without ceasing exist, has put on the thickest veil and cast into the shadow of most ignorance. It is the case of my being almost completely absorbed in the pragmatic fact. So also, let us put down as equal to zero a part which, without being effaced, has sunk down almost completely to the level of the concrete, whole fact. This is perhaps the case when I lay aside all motives and abandon myself to the fact, the whole fact, as it possesses me. Clearly, both veiling and unveiling are operations which are continuous or gradual, and hence we may pertinently enquire as to what becomes of their objects *in the limit.* Thus we may enquire about such limits as Lt W = o, Lt P = o, where W and P stand respectively for 'whole' and 'part'.

Again, what can the expression $W + P$ mean in our science? The sign of plus ought not to be interpreted in the ordinary mathematical sense. Indeed, mathematical limits and operations are all abstract, special cases of fact-limits and fact-operations. The expression will mean a whole in which a part is discriminated, or rather a judging thought which compares a whole with its part. The two aspects are brought together in thought, and such bringing together or collocation is the original of the mathematical operation of summation. For clearer distinction, we shall adopt the symbol $W^P$ to denote a reviewing thought which merely discriminates between the whole-aspect and the part-

aspect, but does not go the whole length of actually comparing them.

Bearing these definitions in mind we proceed o lay down the following as a fundamental equation of fact-development :

$$\text{Lt. } W=0\ W^{P} + \text{Lt } P=0\ W^{P} + \text{Lt } W'=0\ W'^{P'} + \text{Lt } P'=0\ W'^{P'} + \text{Lt } W^{n}=0\ W^{n\,P^{n}} + \text{Lt } P^{n}=0\ W^{n\,P^{n}}$$

$$\textit{or,}\quad \mathbf{S}\,(\text{Lt } W^{n}=0\ W^{n\,P^{n}} + \text{Lt } P^{n}=0\ W^{n\,P^{n}}) = n\,(W+P) = n\,W, \textit{ or, } n\,P.$$

This equation illustrates all the cardinal principles of fact-operation which we have been so far explaining. The first term of the left-hand expression denotes a pulse of fact in which the part is so much emphasised that the whole, without being effaced, is hidden under the thickest veil. For all practical purposes, though not really, this term is equivalent to the part, P, alone : I have so completely ignored W that I believe I have P only. Evidently, zero in the term cannot be interpreted in the ordinary mathematical sense, in which case the term itself would be reduced to zero. According to our principle, W is unveiled in the next pulse of experience and P goes into the shade as completely as would be consistent with its bare, toneless existence in W. This aspect of the operation will be, for all practical purposes, a W. Next, according to the principle of movement, the old

combination $W^{P}$ changes into $W'^{P'}$. To this new combination also the principle of alternate veiling and unveiling applies, giving us as the next two pulses of experience P' and W'. $W^{n\,P^{n}}$ is the typical combination in the series. Again, the principle of spontaneity requires that any combination $W^{P}$ will withstand with variable success both the veiling and the moving operations. Hence, in a typical case, $W'^{P'}$ is not utterly different from, but more or less similar to, $W^{P}$ which has preceded it. So at the end of the operation we believe that we have had *n* pulses of the logical combination W + P. The differences in the successive appearances of W and P we have ignored: we say we have had *n* identical or similar experiences concerning an object. Again, by a further application of the principle of veiling or ignorance the thought *n* (W + P) is broken up into *n* W or *n* P: I think that I have had *n* successive pulses of the whole, *or*, *n* successive pragmatic facts. I may be in a mood either to accept the whole-aspect of the process and ignore the part-aspect, or to accept the pragmatic facts ignoring the wholes. The latter, however, is a more ordinary mood.

Suppose we have a Fact, A. Then, we have for the equation of the reviewing fact which represents A as an undifferentiated complex continuum or Fact-stuff the following :

$A_1 = F^u$, where $u$ means unthinkable or alogical. The reviewing fact is also a concrete fact; hence it involves a base and an index: it is an experience which includes the thought of another fact as unthinkable or alogical. Now, by the principle of veiling, we have

$A_1 = F^u = u$, putting $F = o$ of ignorance In other words, it is the pragmatic representative index which passes for the reviewing fact. The experience which we call the reviewing fact is evidently larger than the representation of A as alogical, yet I take it as equivalent to this thought I say I have in the second moment a representative conception of A as an alogical phenomenon But is this *all* that I have? Surely, I have ignored much.

Again, suppose a second reviewing fact following close upon A, comes. Let us have the following equation:

$$A_2 = FSe\,(\lambda, \phi\, F^u)\, d$$

$A_2$ is a Fact which thinks of another Fact, B, as a synthesis ($s$) of experience ($e$) with respect to ($d$) a certain determinant factor $\lambda$ and a certain function of $A_1$ ($\phi\, F^u$) which just preceded B. B is, by supposition, a fact subsequent to $A_1$, hence in virtue of an indisputable psychological and cerebral law, B cannot but be influenced in some way by its forerunner: the forerunner $A_1$ has ceased to exist actually when B appears, but it has left be-

hind itself a disposition (let us adopt this serviceable word for the present) which must be a certain function of $A_1$. Again, B is supposed to be determined not simply by a certain function of $A_1$, but by a new determinant factor $\lambda$ in consequence of which B has become a distinct phenomenon. Thus I represent B as a synthesis of experience with respect to the two determinant factors, $\lambda$ and $\phi F^u$.

Now, let us apply the principle of veiling. Put F=o of ignorance in the above equation. We have

$$A_2 = Se\,(\lambda, \phi F^u)\,d;$$

the presentative or intuitive base is ignored, or rather the representative part is complacently mistaken for the concrete whole. Next, let us put $\phi F^u = o$; we have

$$A_2 = Se\,\lambda\,d;$$

we have chosen to forget the contribution of $A_1$ in the making of B; we represent B as a synthesis of experience with respect to the determinant factor $\lambda$. Next put $e = 1$; in other words, let us suppose the experience in question to be a unity, dispensing therefore with the operation of synthesis. Like our zero unity also bears an interesting meaning of which the ordinary mathematical and physical meanings are, as I believe, abstractions. Experience can never be put = o; we can never ignore experience itself, though we can and do ignore parts, or features, or sections of experience. By

putting it = 1, we mean that we no longer intend to regard it as a synthesis of any operation or operations, that we take it as pure experience ignoring its synthetic or composite nature. According to this view, therefore, we must have $e\,\lambda = \lambda$; or any construction put upon pure experience is equivalent to that construction or determination, a principle that underlies the mathematical principle $1 \times n = n$. It should be observed that the putting of 1 for $e$ is really veiling or ignoring its synthetic nature. We have, however,

$$A_2 = \lambda\,;$$

in other words, $A_2$ conceives B as practically equivalent to the determinant factor which constitutes it a distinct phenomenon. It is thus that a peculiar feature of a phenomenon passes for the phenomenon itself; the new or prominent member of an assemblage of conditions is ordinarily taken to be the cause.

Lastly, let us suppose we have the following reviewing fact:

$$A_2 = F^{Se\ \overline{i,\ \beta,\ \alpha,}\ \ \phi\,\lambda)\ d.}$$

This is a fact which involves the conception or representation of another fact as a synthesis of experience differentiated with respect to base, index and co-efficient. This becomes by the principle of veiling,

$$A_2 = Se\ (i,\ \overline{\beta,\ \alpha},\ \phi\,\lambda)\ d, \text{ putting } F = 0.$$

The whole fact which involves a conception becomes thus equivalent to the conception itself: we

have the miracle by which the whole can be equated to a part. In the representative thought there is a determinant factor $\phi\ \lambda$: the experience is taken at first as not equivalent to the thought of base, index and co-efficient alone. $A_8$ thinks of another fact as a polar triangle of base, index and co-efficient determined by a proper assemblage of conditions: in thinking of the previous fact I also think that its attitude of polarity is conditioned by a certain, I know not what, factor. In fine, the reviewing fact may be the thought of polarity as an *effect* of a certain cause or determinant circumstances: the thought of the cause may of course range from a bare suspicion to a fairly articulate conception. But in any case should not this last thought find a more proper place in one of the poles themselves? I shall not dispute the position that it may; the thought that includes the representation of A as an effect of B, also includes the representation of B as the cause of A; roughly, but not strictly, the thought of A as an effect of B is equivalent to the thought of B as the cause of A; but whatever the precise relation of the two aspects of the thought may be, each is perhaps of sufficiently vital importance in thought as well as in practice to require a separate exhibition. And indeed when I think of a fact as a polar triangle of the above pattern I commonly, though not necessarily, think of the triangle as an effect, and therefore as carrying reference to something—I need not have a distinct conception of this

something—as the cause. I have sought to distinguish this circumstance by noting separately $\phi\lambda$.

But presently by a further application of the law of Ignorance, this determinant factor is banished from the conception : this means not that I have next a thought of the polar triangle as an effect bearing *no* reference to a possible cause, which is impossible ; but that I cease to think of the polar triangle as an effect ; I take it complacently without apparent inquisitiveness. Thus I have

$$A_8 = Scd\ (i, \beta, a), \text{ putting } \phi\lambda = 0.$$

How does now a fact appear in review ? It is an experience—synthetic as I take it—differentiated with respect to the three elements $\alpha$, $\beta$ and $i$. Next we have

$$A_8 = (\alpha, \beta, i), \text{ putting } e = 1.$$
$$= \alpha, \text{ or } \beta, \text{ or } i,$$

by appropriately applying the principle of ignorance. Hence a continuum of experience is ultimately taken as equivalent to such very partial features as $\alpha$, $\beta$ and $i$.

We may also note in passing the very common and interesting case in which a concrete fact which involves the polar triangle ($p$, $q$, $r$), *viz.*, Subject, object and Stress between them, is believed to be either a subjective, or an objective, or an interactive fact. It is needless to remind at so late a stage that the so-called subjective, objective and interactive facts are only abstractions—or as we have called them fact-sections. A rose of perception is an objective fact because we have attended

only to a special aspect of the entire concrete fact of the moment : surely what I believe to be the rose does not exhaust the entire experience that I have at the moment of perception. Take the entire fact as it has come, and objectivity is lost. Again, the thought of Tennyson's In Memoriam is believed to be a subjective fact, because here also I have been interested in a fragment of the concrete experience of the moment only. The whole experience is neither subjective nor objective. Experience is commonly regarded as subjective because subject is perhaps the commonest and the most interesting pole which appears in it : the emotional basis of the thought of *me* is peculiarly lively : while the objects of experience are in a continual flux, the subject apparently endures inasmuch as all objects, however various, *can* be referred to a Subject. But as I have already suggested before, the subject is no more an inseparable feature of experience than an object. Very often the polarity of Subject and Object is not at all in evidence in the life of experience : even when the polarity does appear, regard oscillates between the two poles ; and the experience which involves a thought of the two poles can evidently not itself be equated to either.

It is through the unfailing operation of the principle of veiling that Life judges and acts. Cognition and interest are almost invariably blended together in every concrete fact of consciousness : I feel and wish, with more or less

emphasis, while I fancy that I am only thinking or knowing; and certainly my feeling and wishing are not altogether without any influence upon my cognition. This influence generally determines to a very considerable extent the nature of what I think or know. A thought or knowledge may thus properly be regarded as a function of the emotional and conative prepossessions and expressions of the mind. The universe of experience is indeed too large for any of my ordinary interests of life: an infinity of features, emotive, cognitive and conative, are there in solution, as it were, in this universe. But I care not for all this infinite richness of my intuitive life. At a given moment a particular interest, say the writing of this essay possesses me. This special interest behaves and operates in my actual universe of the moment as if it were a thread -a special preferences dipped in the universal solution. All sorts of things are there in this solution, but my thread selects only some and rejects others, and accomplishes by such a selective operation what I look upon as my crystallized fact of the moment. The thread of interest gathers around itself a crystal, a pragmatic fact as I have often called it, and I fancy that this little crystal of my creation is my fact. How easily I seem to forget my universe—the general solution! Thus the operation of interest in life is analogous to the process of crystallization: it essentially involves the ignorance of the whole and preference of a part. On the

other hand, what I look upon as my interest is only a fact-section, and not my concrete fact at any time : it is only one aspect of the universe that I live. Briefly the facts and processes with which the science of the Mind has to deal are all fact-sections abstracted from the universe of experience by the habitual operation of the principle of veiling. Life as we conceive it becomes completely undone if its universe cannot be made to wear a veil and only its aspects made to appear, if while ever living in the whole truth we cannot apparently ignore and forget it : complete and perpetual abandonment to the whole truth would rob life of all its present interest and significance : complete absorption in the concrete whole without ignorance and accentuation would certainly not make life impossible, but it would be a kind of life altogether foreign to our conceptions. Let us for one moment conceive a Mind to which Existence stands unveiled wholly and once for all : there is no alternating play of light and shade, apprehension and ignorance, acceptance and disavowal in it. Now, what kind of consciousness is this ? Clearly it is a kind of conscious life in which the polarity of base, index and co-efficient, and that of subject, object and stress cannot exist ; for, polarity, as we have seen, presupposes oscillation of regard between the poles, and oscillation of regard presupposes ignorance and accentuation : I cannot alternately attend to the two poles or foci, A and B, of a given curve of experience, C, without inducing facts in me like

C **A** B and C A **B**, where bold type represents alternate accentuation. If however this law of oscillation and alternate apprehension and ignorance should fail in the case of the supernatural life which we have imagined, it might be equivalent to a stretch of experience in which polarities of two, three, or *n* dimensions might exist; but none the less it would be a kind of experience of which *we* should possess no manner of conception. I might, however, call this an *experience of unrelenting concrete*: not that any life, even that of the amoeba, can ever cease to be concrete, but that in thought and selection we are constantly apt to ignore and forget the concrete, and deal with abstract sections of the fact: *unrelenting concrete* would be an experience in which this aptitude should not be in evidence: it is to live the whole *always*, both in intuition and in thought. We too live the whole always, both in intuition and *while* we are in thought, but in thought we generally care for, and fancy that we are having, facts which are but fact-sections. In putting down an equation of the unrelenting concrete we should have the following cases:

(1) In the previous fundamental equation involving W and P (whole and part), W should never be put equal to zero; for, by supposition, W is unrelenting and cannot be ignored. On the other hand, P must ever be put equal to zero; for, by supposition, P is never regarded in isolation: the part *as* part is never viewed or reviewed; it is

merged in the whole once for all. If the part exists at all, as perhaps it does in the continuum of the fact-stuff, it is not contemplated as a part. In the case in question we have the whole always including of course its parts, if any, but never a contemplation of the whole in relation to its parts, never the polarity or opposition of W and P. To take the part aside I must ignore the whole, and to live the whole complacently I must never take the part aside. I have already alluded to the degrees of veiling or ignorance; but choosing to take ignorance in a qualitative rather than in a quantitative sense for the present, I observe that a life of unrelenting concrete is a life of fact-staff pure and simple, involving no discriminating judgment, and not presuming to be a thinker. An experience involving judgment and science is indeed a concrete alogical fact in its entireness; but still there is this vital difference between F and F′ that while the latter involves within itself the mysterious operation of veiling and unveiling, the former apparently does not—at least it does not if we attach for the present only a qualitative value to the principle of ignorance. In the former the veil of existence is almost completely uplifted: we shall see to what extent the veil still remains: an enquiry about the extent of veiling will just now goad us into a consideration of the quantitative aspect of the Veil. In the latter is not the veil more conspicuously drawn? While not actually ceasing to be the concrete fact in F′, do I not

identify myself or my experience with what is only a section of the concrete fact? Now, such an identification is possible only through ignorance of the entire fact. It should be observed further that the putting of o for P in the combination W P does not mean that the part is cleanly annihilated from the whole, or that the whole is a stretch of experience in which the distinction of whole and part does not appear either logically or intuitively ——the experience being a pure homogeneous continuum——; it means that the part has not separated itself in thought from the whole of experience: the part is given along with the whole, but the two aspects of the category do not surprise or challenge each other in thought.

(2) Does the equation $F' = I_1^f$ apply to the unrelenting concrete? Recalling the meaning of the notation on the right-hand side we see it is an experience which while feeling itself infinite recognises finite determinations in itself, and yet conceives itself as a unity. Now, what does the recognition of finite determinations in an infinitely extended continuum precisely imply? Does it not mean that the unbounded continuum has been emphasised at certain places only? At any rate, this is the meaning that will suggest itself to our minds in the light of the interpretation we recently put upon I of the equation. Now, if the continuum involve preference and emphasis, does it not involve veiling or ignorance too? Suppose I have a view of the sky at night emphasised at the star Sirius,

Does not this experience involve ignorance of the whole concrete fact and accentuation of a part only, *viz.*, Sirius? In intuition of course, as previously suggested, the concrete whole stands wholly or almost wholly revealed: I have a vision of a particular star, but an experience of many things besides; nay more; all these other things together with the star are felt by me as appearing in a *plenum* of awareness to which as such I can assign no bounds whatever. But does the fact continue to wear this aspect in review? In reflecting on the previous fact I may not actually put my experience as being equivalent to the vision of the star Sirius merely——though this is perhaps what ordinarily happens in the life of consciousness which is generally swayed by pragmatic ends: a pragmatic fact *is* silently regarded as equivalent to the concrete whole of experience in which it has appeared. But assuming that I faithfully portray my previous experience in F′——as faithfully of course as is possible from the very nature of the case——do I ignore any aspect——whole or part——in F′? Let us suppose that F′ is a scrupulously faithful representation of F which has just gone before. Do I conceive that anything has been veiled or ignored in F itself? The conception, it is needless to remind, belongs to the reviewing fact. This is a question which, like most others in this fundamental Science, can be settled only by an appeal to direct reflection. Now, reflection seems to establish that my unrelenting concrete——

which is my entire universe itself at any moment —is apparently an object all laid bare, a tale all told with nothing concealed. By supposition I have abandoned myself completely to my concrete experience. No fact-section has apparently been drawn apart, abstracted: and hence there is apparently no veiling, no ignorance.

But stay. Is the unrelenting concrete of the kind drawn above an existence all revealed, a fact all exposed? We have seen that in a distinct sense the unrelenting concrete is all laid bare: it is my universe, boundless as I feel it to be, and therefore appearing in full, keeping nothing back. There may be in such an experience a pregnant suggestion of still vaster possibilities: the world that I actually have may be believed to be but an earnest of a richer and fuller world. But it is easy to perceive that this suggestion and this belief are inside and not outside the world that I possess —they constitute only the co-efficient of our fact of experience. Let us for one moment waive the objection that such an world may involve the veiling of possibilities: can I say that as an *actual* world all laid bare to my regard and enjoyment it involves no ignorance, no incidence of the inscrutable Veil? Possibilities may be veiled in my universe, but as an actual can it not pass for the unrelenting concrete? I reply, No. Even the concrete experience of our ordinary acquaintance *does* involve the veil, and this it does in a special sense to be considered in the next section.

## 10. *The Veil as a variable.*

It is clear to direct reflection that the veil of ignorance is not cast over the continuum of experience as a homogeneous circumstance throughout : veiling is evidently also a question of degree : there is ordinarily always a differential distribution of psychic tone over a field of experienee. Now, this principle of differential distribution has to be read along with the principle of absolute veiling and unveiling in order that we may find an workable key to the analysis of conscious life. It is the curve, the shades of ignorance which now press themselves into own consideration. Having attended to the **Principle of the curve** we shall in the next place see if we can settle the relation between this combined principle of veiling and differential distribution and the principle of movement which we have explained in the preceding sections. As the principle of the curve appears to be of paramount importance we shall do well perhaps to study it in some manner of fulness.

How does the principle of the curve stand to logical contradiction? Logically, not-A is the contradiction of A, and *vice versa.* It is possible no doubt to transplant this logic of contradiction into the life of thought and action——into the world of concrete experience ; but such logic is not always available or serviceable. To have a feeling and not to have it, to do an action and not to do it,

are simple cases to which our logic applies easily enough. But unfortunately for logic the concrete world is not an assemblage of mere A's and not-A's——in life as well as in Nature positives do not pass unceremoniously and abruptly into negatives, but each set shades into the other through countless gradations. The music of our earth dies away into silence not abruptly, but through softer and softer echoes; the splendour of a gorgeous sunset is shrouded in the sullen shadows of twilight not abruptly, but through paler and paler tones of colour. In the heart of man again a feeling does not rise and die away with the sudden brilliance of a shooting star. It is indeed the softer keys between a feeling and its opposite, between love and hatred, between faith and fear, between selfless devotion and impervious selfishness, that impart to the playing of life's drama all its peculiar charm and significance. If man were left to choose between a few stereotyped, hard and fast positives and negatives, life would not be worth living, and man would be as much a logical automaton in practice as according to Huxley he is in theory. To such softer keys, such finer shades and delicate links it is not easy to apply the hard logic of contradiction. A feeling is there——it is a positive fact. If it is not there, it is a negative fact, and we have logical contradiction. But if a softer key of the feeling be there, another mode of it, shall we say that this softer key, this another mode, is the contradiction of the original feeling? I do an act, you do the

same act but only a grain less ; shall we say that while I have done it you have not?

Even in such cases the position of logic is unassailable in a clear sense. For logic and logical psychology a feeling and a softer key of a feeling, an act and a close approximation to an act, are different facts——as good positives and negatives as any——unimpeachable A's and not-A's. Indeed in the life of consciousness we cannot have absolutely identical facts ; it is only by abstraction and veiling that common sense accepts as identical facts what are merely more or less similar. Two pulses of fact, ABC and ABD can evidently be looked upon as identical only by veiling the wholes in both cases and accentuating the parts AB : two letters in different configurations are taken by us to be the same because we ignore the configurations : two events happening in different times are believed by us to be repetitions because we ignore the times. If the concrete is allowed to stand unrelentingly revealed, life sinks down to the level of the alogical ; we have the dumb, actual flow or stretch without any recognition of either distinct, or similar or identical pulses. The recognition of each of these categories presupposes more or less ignorance of the concrete. If similar pulses cannot be known as identical without ignoring distinctions, it is true also that any two pulses in the flow of life cannot be known as distinct without ignoring bases of resemblance. The operation of the veiling principle may be symbolically represented in

the following manner: Suppose we have a given stretch of experience

$$F' = A\ B\ C\ D\ E\ B'\ C'\ D'\ F A \ldots\ldots\ldots \quad (1)$$

In this there is no recognition of distinct pulses. Now, applying the principle of alternate veiling and unveiling of whole and part we have

$$F' = (ABCD) + (EB'C'D') + \ldots\ldots\ldots \quad (2)$$

The affair now assumes the aspect of a series consisting of distinct pulses of experience. Now, in the right-hand expression of (2), put o of ignorance for the elements A and E; in other words, let the whole pulses be veiled and the parts BCD and B'C'D' be accentuated; let us also ignore the dashes in the latter pulse. After these operations, we clearly see that the subject may fancy that he has two identical pulses of experience.

To recognise one pulse as *other* than the other, the subject's attention has to be especially directed to the distinctive features in each: agreements have to be more or less concealed and discrepancies have to be more or less accentuated. No two pulses of experience can be discriminated as *two* distinct states in which the subject's regard has not preferentially settled on their discrepancies: an experience in which no discrepancies, not even those of time and space, appear and can be taken notice of, must be felt as a single, continuous stretch, and cannot be broken into pulses at all. Now, does the perception of distinction or otherness involve the veiling operation or not? To know A

as other than B, I must have $C_A$ and $C_B$ ——or a continuum of experience accentuated respectively at A and B. But the continuum is $C_{A'B}$ before the recognition of the two features or pulses, where the accent means emphasis. This is the whole. Now, this whole must be twice veiled and the parts $C_A$ and $C_B$ twice accentuated in order that there may be possible in me such a discriminative thought as '$C_A$ is other than $C_B$.' Again, $C_A$ is a whole in relation to A, and so is $C_B$ in relation to B. And these wholes must be veiled and the parts accentuated in order that there may be in me such a recognition as 'the pulse A is followed by *another* pulse B.' I have not here attempted a complete analysis of the discriminative recognitions referred to before: I have merely shown how in their essential features they illustrate the veil. I may also observe that in the perception of otherness common and similar features need not be *wholly* obscured: such a perception is not a perception of utter, downright difference, as we shall see. But none the less it is necessary that the whole together with affinities must go under a veil, and that the part together with distinctions must press into relief: it is clear that the veil need not mean effacement and the relief need not mean thought-monopoly.

The perception of similarity appears to be a cross between those of identity and otherness.

Without invoking the Hegelian dialectic on our head, we may say that the thought of sameness involves a minimum veil, and the thought of otherness or logical contradiction involves a maximum veil, and the categories of identity, similarity or likeness negotiate between these minimum and maximum, and are therefore in an ascending order as regards *quantity* of veiling. This is a question of enormous philosophical interest, and I shall not certainly lightly pass over it when the time for its treatment comes. Let us note in the meanwhile that F′ in thinking of the concrete whole or F thinks that it is the *same*: what the concrete whole is, it is: it is taken unreservedly, with nothing kept back, and nothing mutilated. This circumstance I may perhaps aptly represent by the following equation:

$$F' \doteq E^{F = F},$$

which evidently means that the reviewing fact may recognise a concrete whole as a concrete whole, a fact as the same as itself. Here is the Spirit's bold disavowal of the veil, a solicitude to look existence in the face. To recognise distinctions, similarities or even identities the Spirit must, as we have seen, play hide and seek with itself: it is only by recognising the concrete, the whole concrete and nothing but the concrete that I can keep nearest to the bosom of the mother-stuff from which by endless veiling and unveiling my universe has grown like a hypnotic dream. Refuse for one moment to take anything short of the given All,

and you at once raise yourself above all antitheses and oppositions: oppositions presuppose poles discriminated in the whole—require what we have previously called the combination W+P. In mere W which does not relent and relax, no P, though given, can be discriminated: to discriminate it we must ignore the whole in a fashion. Now, how would such a fact accommodate the categories of identity, likeness and otherness?

Logic and common sense do not always keep house together. To an abstract science like Logic mathematical precision is not criminal: it may deal with only round positives and round negatives. But surely life as well as science become impossible if we do not admit intermediate conceptions, crosses between pure A's and pure not-A's. Logic as we have seen is perfectly within her rights: similar or identical facts are *different* facts: twin stars of equal apparent size and brilliance are different stars and not the same, hence we may fairly say that if the one is A the other is not-A. But common sense and science cannot be content with such a summary way of putting things. The world is a ceaseless flux, and no facts, or rather fact-sections, in this flux are aboslutely alike—neither subjective nor objective, to introduce provisionally this familiar distinction. And if none but identical facts are to be classified and given common names, if, that is to say, we have to choose between the categories of pure identicals and downright others, then we should make up our minds to go without

any science. Science has mainly to build upon partial resemblances: identicals are rare and absolute likeness in the order of phenomena is a non-entity.

That in the objective world no fact ever repeats itself is a proposition which everybody is perhaps ready to grant. The anxious precision of modern scientific analysis has not been in vain. Even the minutest features and changes in things cannot escape the notice of lynx-eyed Science: the savant discovers myriads of changes and an infinity of features where the common observer suspects none. Indeed, the telescope, the microscope, the spectroscope have revealed to the bewildered imagination of man an universe infinitely more stupendous than what his natural senses can introduce to him. 'We can never bathe twice in the same stream' said one of the sages of the past, and modern science equipped with its magnificent means and methods of analysis has proved the wisdom of the saying. We cannot live in the same universe for two consecutive moments.

If this is true of the world of objective phenomena, cannot the same thing be true of the world of subjective phenomena? Are not the macrocosm and the microcosm run on parallel lines? Are they not two aspects, segments, sections of our concrete Fact? I see a book on the table, and have a perception. After a few minutes I see the same book on the same table, and have another perception. Are the two perceptions absolutely

alike mental facts? The very circumstance that they are taken as *two* facts implies that they are not absolutely alike. But let us waive this point. To careful introspection, possibly the two facts do differ in certain ordinary and inessential—for the pragmatic temper of the moment—respects; but the difference is ignored because it does not fall in with my pragmatic interest, or possibly because some involuntary conditions keep certain features of the one and certain features of the other in the penumbra of semi-attention: in one word, because the concrete wholes are veiled and parts only are accentuated. But whatever the conditions of the difference may be, the difference is there. Even apart from this difference we have to take into account another circumstance in which the first impression of an object must differ from any subsequent one. The first time I see a book it is, let us assume, only a particular book for me. When I see it again, it is the same particular book *plus* something which was not in the first impression—a recognition of it as the same dear old and of myself as the same dear old subject. If the first impression is $x$, and the sort of recognition of it I have just described $y$, the second impression must be (assuming that recollection does not fail us) $x \cdot y$; and this on the hypothesis that $x$ can repeat itself, which it cannot. For similar reasons, an impression and a memory of it, even if the memory is a true image of the impression, cannot be absolutely alike facts. The self cannot bathe

twice in the same stream of consciousness. Scientific analysis has chased out of existence the myth of absolute likenesses, and introspection has made short work of the superstition that in the life the Mind pulses of feeling repeat themselves. This being one of the unassailable positions of the Science of Fact, we put this: Shall we lend countenance to absolute likeness, or in default of them, set our faces against all partial likenesses? If the full loaf cannot be had, shall we prefer to go without any loaf to accepting half a one? We are fairly on the horns of a dilemma. If a fact is to be considered an other fact when it very nearly resembles a given fact but not exactly, and if therefore on account of this otherness the two facts must not be brought together under a common category and name, we have no classification and no science. If partial likenesses are accepted in our schemes of knowledge, if, that is to say, we propose to build our classifications and scientific knowledge on partial resemblances of things recognising that absolute resemblances are not available, we have to compromise the pure blood of logical contradiction. A first impression of an object and a subsequent impression, an impression and a recollection, *are* in a clear sense different states. Nevertheless the common sense of humanity has been wiser than its logic. Commonsense has decided that for the purposes of life and systematic knowledge it shall be open to the knower and thinker to accentuate certain features and ignore

others. All fact-sections are born in a co-essential fact-stuff, so that they cannot but possess bases of affinity: we can conceive of no difference so utter and down-right as to spell the absolute negation of such bases of family resemblance. On the other hand too the movement of the continuum, which for our present purpose means the sum of fact-sections, implies the continual appearance and disappearance of novel and therefore different features. Hence likeness-in-difference or difference-in-likeness are the categories that ordinarily always apply to the representation of experience: the place of emphasis is evidently different in the two cases.

Knowledge is progressive. To know a thing is not to know it all at once. From indefiniteness to definiteness knowledge moves. For one moment let us define truth as an ideal. Then, like an asymptote gradually approaching a curve but never actually meeting it, human science is gradually approaching the fulness of truth but is perhaps never destined to realize and embody it. Knowledge, empirical knowledge at any rate, is thus an asymptotic approximation. Partial knowledge is therefore a necessity. We are bound to have different orders and grades of knowledge. For the inspired soul of the poet the meanest flower has thoughts too deep for philosophy; and the tiny sparkling dew-drop on that grass or a small particle of sand on this paper has mysteries squeezed into its littleness which it may take half a dozen Tyndalls and

Darwins to unravel in their life-times. This being the law of the evolution of human knowledge and in the face of the fact that man must needs have a science, is it prudent to persist in regarding the various grades and instalments of knowledge of a given fact as wholly different pieces of knowledge—uncompromising A's and not-A's—which must on no account be co-ordinated and organised? A fuller knowledge of a thing cannot always be taken as a contradiction of a less full knowledge of it—not as a mere other with which the latter should never form an alliance. Man must not only distinguish but he must also co-ordinate. Observations have to be co-ordinated with observations, the former has to be co-ordinated with the latter, senses have to be co-ordinated with imagination and reasoning—without such co-ordination distinctions are dreary and differentiations are barren. Should the present be always pledged to belie the past, if differences were always to be looked upon as denials, surely man would have to go back to the amœba and learn his psychology anew from that primordial ancestor of his. But fortunately man's greatness is not going to be wrecked upon a life of mere others, mere pulses without assimilation and co-ordination. As we have to distinguish between a more and a less in our knowledge so we have to distinguish between a more and a less in our estimation of it as true or false. Living is thus not merely a question of *kinds* but also very prominently a question of *degrees*.

Knowing is selection. My world is not merely my idea but also my will. Even in our apparently passive acts of perception we select, we emphasise certain features and ignore others, we encourage certain bearings and connections and discourage others. Knowing is not always uniform partly because selection is not uniform. This view of the knower as an essentially selective agent is steadily gaining ground in the well-informed quarters. Nature is mysteriously selective, the living tissues are selective, and there is no sufficient reason why sentiency and reason should not be selective too. This is the Principle of Continuity. In a sense, Nature still abhors a vacuum. On the other hand, there are reasons why conscious life should be of a selective nature. Non-selective knowledge is perilous. Non-selective knowledge cannot consist with the ends of life.

Without meaning any injustice to the ultra-rational factors of human evolution, I want to emphasise for my immediate purpose the importance of intelligence in the history of human affairs. The progress of man must be attributed in a large measure to the speciality of his cerebral and intellectual development. In the struggle for existence man could never hope to win for himself the crown of victory if he did not posses a brain and intelligence more selective than those of his competitors. Perhaps it will not be unprofitable to look into the cerebral aspect of the question. The cerebral hemispheres of man are undoubtedly

a system of tensions of a highly unstable character This extreme delicacy and instability of the cerebral mechanism is at once a condition of man's power and glory, and a source of his danger and embarrassment. The dilemma again. Given a nervous tissue with but few and fixed possibilities of action like that of the lower animal, progress becomes very much hampered. The nervous system becomes a mechanism for a few stereotyped reflex activities: such a system may be well conceived to show spontaneity also, but its spontaneity will mainly be of an instinctive nature. *Ex hypothesi* the brain cannot depart from the narrow groove of its fatal possibilities. Given a nervous tissue extremely delicate and unstable, possibilities of advancement multiply no doubt, but with them also multiply possibilities of anarchical confusion—an unstable brain will as readily carry us to victory as to ruin. An accumulation of brute forces is no doubt the first condition of fighting power, but discipline is the second and an equally indispensable condition of success in any line. Now where is this discipline of the forces represented by the brain? What is it that 'loads the dice'—to borrow a happy figure from Prof. James? If any and every current that ran into the brain were to throw it into a vortex of uncontrollable excitement, if in the life of the brain to touch were to excite and to excite were to goad into action, if there were absolutely nothing to exercise a salutary censorship—to inhibit and direct, to switch and

augment—to be the guide, friend and philosopher of the blind, unruly forces—then, man would be completely undone, and Nature would be driven to give up what is presumably her most edifying business. If there were any business which required to be most anxiously looked after, it was the affairs of the brain. Both the receipts and the disbursements—the in-going and the outgoing currents—of the brain have to be supervised. The mystery that dwells in the hemispheres and does all this work is of course shy of public inspection. But all this work has to be done, and and all this is being done. Cause or effect, the selection in the brain is the counterpart of selection in the mind: the brain is the will objectified as Schopenhauer might say. And from this it follows that a fact in the mind—I am now speaking in the abstract phraseology of psychology—is always a selected fact, a pragmatic fact; selected, in the first place, from among other fact-sections that solicit your favour, and in the next place, from among other forms of the same fact. Out of a limitless fund of actual and possible features I seize upon a few, accentuate a few and ignore the rest. The very same group of features may possibly be thrown into all conceivable permutations and combinations—a fact may take a new character and complexion each time a new selection, a new adjustment is made. Into the nature of the selective principle I would not lightly venture to pry. How does it relate to the Veil? Selection is essen-

tially a synthesis of ignorance and preference it presupposes veiling, but simple veiling does not express the full significance of selection. But whatever be the full significance and agent of selection we understand it. Suppose a given continuum is differently treated in two moments: we have $C_A$ and $C_B$. Shall we say that they contradict each other, and that if the one is true, the other is necessarily false? In a sense of course we may answer Yes. But ordinarily shall we not say instead that the one is possibly a fuller, a truer fact than the other, and not its denial and opposite? We know what the reply of common sense and science will be. To say No is to plunge headlong into a veritable chaos of mutually clashing and jarring opposites, where no order appears, no system. Partial likeness is the very possibility of science. And what is partial likeness but a compromise between an other and a non-other, a hybrid conception in which two opposite notions, the same and not the same are intercrossed? Life and science deal in such hybrids; they cannot stand the pure blood of Platonic archetypes.

Suppose we imagine a World-consciousness in which Facts are in the fulness of their bearings the pole of the co-efficient is nothing, and that of the actual is everything. This is the infinite, quiescent concrete Fact to which it is clearly impossible to ascribe movement and also veiling in the ordinary sense. It is perhaps Green's Spiritual Principle in Nature in which the infinite tissue of

relations which we call the world remains eternally realized. Now, in what light shall we regard selection in relation to this statical, infinite concrete? What is an ordinary, pragmatic fact in this limitless ocean of existence?

Things are in the fulness of their bearings in the World-consciousness, and in the fulness of its bearings a thing is simply the whole system over again. A drop of dew cannot be understood fully without understanding the whole universe to which that drop belongs and to which it is correlated ; to understand a ripple of a tone is to understand the song which awakens it ; to understand a touch of beauty or pathos is to understand the pulsating hand and the throbbing heart of the master behind it. I believe that I know a thing gradually and partially : nothing is *all* actual for us ; we conceive everything as growing in a limitless plenum of possibilities. We do not take our knowledge as the ideal, the consummation of knowledge : we do not accept our truth as an ultimatum. Hence our reality is dynamical, evolving. In the World-consciousness, we may suppose, the universe of fact is not only unbounded but also all actual : even *my* universe of fact is unbounded in a distinct sense, but it is not without its co-efficient of possibilities. Hence reality for World-consciousness is quiescent, statical. We may conceive that this quiescent reality is being gradually and partially reproduced in us. From my own point of view the distinction between finite and World-consciousness is a dis-

tinction without a difference: I have more than once suggested consciousness as an unbounded plenum in which the universe of fact grows—moves, is veiled and unveiled: consciousness as such is *never* finite. But though consciousness as such would not admit of any partition and classification, we may surely conceive *two* conditions of the universe of fact in it: the statical, quiescent universe which is all actual, and the restive, evolving universe which, though also unbounded in a sense, is taken by us as growing in a solution of possibilities. Now, I conceive that my universe of fact at any moment is a gradual and partial reproduction of a statical, quiescent universe. I am not eager to press this view of the growth of knowledge at this stage; but I merely suggest that such a view may be quite naturally taken of the process. In order to assign the place of Selection in this process of the universe of fact I will briefly add this: The gradual and partial reproduction of the Quiescent Real is essentially conceived by me as a selective operation——an operation determined to a certain extent at least by the interests, preferences, predispositions of a given Subject. The analogy of a thread of special preferences dipped in an universal solution has already served us and well; but we need not discuss the nature and place of these special preferences in the scheme of the operation. It is this circumstance, we may observe however, that builds a universe of fact for me at this moment which is not an exact

copy of yours. Both you and I reproduce in a gradual and partial way the same Quiescent Real, but our principles and instruments of reproduction are different, and hence we have more or less different results in the transaction. In a sense, I select my universe, am the author of my fact.

Suppose we agree also to take the Quiescent Real as the last truth. My truth is therefore dynamical, evolving. Truth will thus have for me grades, degrees. A transitional, relative truth is *not* the last truth : it is not-A. So far the principle of contradiction does apply. But none the less a relative truth is a step to the absolute truth : it is *becoming* the absolute truth : it is the absolute in the making. Hence we cannot wholly dissociate the relative truth from the absolute : the former *is* the latter not yet consummated. Hence a transitional truth is a synthesis of truth and untruth. No piece of ordinary experience can wholly contradict the Truth, and none can wholly consummate the Truth. If we define the condition of falsity as that in which the Quiescent Real must be wholly out of touch, then no piece of knowledge can be labelled as false: even the false must live in a certain sense in the real. If we define the condition of truth as that in which the Quiescent Real is wholly given, then no piece of ordinary knowledge can be credited as true. Nevertheless the logical sense of man has to deal in truths and falsities. These therefore are not quite uncompromising A's and not-A's. These are also largely matters for

human choice. Though I cannot get at the Quiescent Real and set up *this* as my standard for ordinary estimations of true and false, I certainly believe that there is such a standard. At any stage, however, I select and fashion a provisional, relative standard to go by. If the final standard cannot be had, let us have a provisional and imperfect standard for the practical estimation of truths and falsities. I persuade myself that this provisional standard is only an approach to the final standard of truth. Now, the possession of this provisional standard at any time presupposes selection. It is again the mysterious assemblage of conditions——interests and predispositions—to which the selection of the provisional standard of judgment at any time must be, as I believe, referred. A rope-snake is an illusion while a block of stone in the immediate neighbourhood is a fact What is the standard of judgment that I rely upon? I only accept *a certain order* of experiences as true and *a certain other* as false. The snake stands for a certain order of experience: it is an aggregate of certain actual and possible sensations, to adopt the language of associationist psychology The rope-snake of illusion is materially different from this aggregate of actual and possible sensations: the latter I have selected as my standard of truth as regards a snake; therefore the rope-snake I reject as false. The account given here may indeed strike one as superficial, but the part played by selection in the economy of belief is not obscure

The question of vital importance is this: If there are all shades of approach to a given truth ranging from utter divergence to complete convergence or correspondence——from maximum not-A to minimum not-A——how shall we draw a line to indicate as to precisely where truth begins and falsity ends, and *vice versa?* How much correspondence with A is consistent with something's being still regarded as not-A, and how much divergence from A is consistent with something's being still regarded as an A? Let A in this problem be an accepted standard of truth. I am not enquiring about logical A and not-A which are perfectly safe in whichever way we may find a solution to the problem. A given thing and the very nearest approach to it *are* different things: and yet we should not forthwith label the one as true and the other as false. The question of truth is a question of maximum and minimum and apparently leaves room for selection. Hence from the view-point of commonsense the problem stated above is an appropriate and important one. It is patent to inspection that a given thing being A, nothing can be an absolute not-A, and nothing—no other thing—can be an absolute A. Bases of contact can be traced even amid utmost divergence, and lines of separation are discernible even in the midst of perfect amity and kinship. The correspondence between something and some other thing—one experience and another—is therefore only a question of *how*

*much.* The question of truth and falsity which is commonly believed to be a question of correspondence is therefore essentially a question of *how much* also. Now, this *how much*, I venture to think, is a matter for selection. It is my interests and prepossessions which surely have a hand in the finding—if I must not say determining—of this quantity. This finding, I also think, requires the application of the Principle of Veiling. It behoves us to make this aspect of the question elear.

Knowledge is a sort of organic process ; and it must have a kind of metabolism of its own—all *grades* of truth co-ordinating into a mass of verified and verifiable knowledge, and all *grades* of falsity fusing together to form the refuse, the excreta of human knowledge ; the former is Science, the latter is Fiction : between the two, however, no steady line of demarkation can be drawn : each shades off imperceptibly into the other. As in the life of the tissue so in experience anabolism and catabolism are two correlative processes, the one being helpless without the other. Truth is not commonly a statical fact given once for all, round a nucleus truth crystallizes itself, and the process goes on not simply by eliminating irrelevent atoms and configurations but by taking in the relevant ones. The process is as much one of refusal as one of acceptance. I have a given fact-section ; a new fact-section comes. I do not proceed forthwith to set them up as contradictories —earmark the one as true and the other as false.

Judgment can usually afford to wait and see. A fact, however apparently insignificant, is organic in a prominent sense. As into the constitution of a living tissue only certain forms of matter are welcome and others are not—as it has its own appropriate food—so a universe of fact can admit into its constitution only certain presentations and not others ; these other presentations to which it is at any time ready to extend its hospitality constitute the appropriate food, so to say, of that fact at that moment. We suppose that the Subject is guided by his preferences—likes and dislikes : even in knowing he cannot but *choose*, and in so far he chooses he vents his spontaneity. Now, according to our science, the Subject is only an abstraction of the fact : what we ascribe to the Subject really inheres in the Fact : the Fact—my whole universe at any moment—chooses and is spontaneous. The fact is the prototype of the living tissue.

A universe of fact has its mysterious preferences, likes and dislikes. These together constitute what I may aptly call the **Habit of the Fact.** In virtue of this habit a fact will readily form alliance with some other facts and refuse to mess together with some others. Now what does this alliance as ascribed to the fact mean ? Alliance is quiescent association. The rope-snake of an illusion cannot associate peacefully with my accepted world of a given moment. In the *whole* universe of fact at any moment any fact-section

that appears is securely welcome: the whole fact knows of no impostors in it: in a sense it is apparently impartial to whatever may be imbedded in its tissue. It is the unbounded *all* and at a given moment it has no *actual* presentation foreign to it—nothing therefore which it may be called upon either to admit or to turn out. We have seen already how from the stand-point of this *all*, there is no illusion, mutual challenge of fact and fiction. But suppose I select and accept for my universe at a given moment what is after all but a fact-section—*viz.*. the objective world: it is the whole veiled and the part accepted. This chosen universe is undoubtedly something that falls short of the All, and may have therefore actual presentations external to itself but embraced by the all—presentations which it may or may not *like* to associate with. This, it must be noted, is not mere figure of speech. That section of my fact which I regard as objective certainly possesses a character on account of which it is so regarded and discriminated from the subjective; it has a *habit* which induces it to take up certain presentations into its own structure and refuse admittance to certain others. *Any* presentation—for some time I am using this word in a broad sense—cannot be fitted in with my objective world of a given moment: the presentation of an illusion, found out of course as such, cannot be accepted while that of a block of stone in the neighbourhood can readily be.

Again, the universe of fact may still narrow down. Suppose $U_0$, $U_1$, $U_2$, etc stand for different universes of fact in a descending order. Let $U_0$ represent the unrelenting concrete. Then we may suppose that as regards actual presentations it has apparently no partiality, no preferential habit. But there may be a co-efficient, a suggestion of possibilities, in it : I may take it not only as an unbounded actual, but also as a halting stage in an endless journey after still vaster possibilities. Now so far as these possibilities are concerned I believe that it may form an alliance with some and refuse to piece together with others. Even $U_0$ therefore may be imagined to possess a habit in relation to the realm of possibilities by which, in a sense, it is limited : we have seen previously how infinitude or limitlessness can be taken in different senses.

There is also a further sense in whieh $U_0$ may be supposed to indicate a habit. Commonly always, a fact involves a pragmatic nucleus, a preferential incidence of regard. If I am looking at the starry heavens now, does not my regard settle with greater emphasis on a particular star or cluster of stars ? I cannot say that the whole is veiled *exactly*, but can say that it is thrown into relief in a particular small tract ; at any rate this is what I think when I pass the fact in review. Let us assume without question this phenomenon of accentuation. Now, let us ask this : why should the continuum be apparently concentrated in a particular spot and feature and thinly formed in its remaining

parts ? What makes life so lavish on a rose and so miserly on the bush against which it may be set ? What makes me eager for a gentle murmur amid the fallen withering leaves of the vernal wood while from every atom of my universe a voice is rising and melting into the chorus of the heavens ? Surely there is here preference of an unmistakeable import. Why should an experience love to appear as a curve with maximum and minimum positions, and not in all cases as a homogeneous, impartial condition of awareness ?

An aptitude and habit can thus fairly belong to $U_0$ – the unrelenting concrete as we are familiar with it. As an actual it may have a preference for some orders of possibility and not for others within its own constitution it may bestow its emphasis on a particular place and feature and not, as we commonly think, on the others. Now, if preference has any necessary connexion with the veil, we must find the unrelenting concrete veiled. This is an amendment to the description that we have given before of its nature : did we not say before that for one moment the unrelenting concrete is a fact all displayed ? All facts are always wholly displayed : a fact is essentially conscious existence, and however we may ignore the whole and favour parts and features in a stretch of fact, the stretch itself never ceases to be felt and known. I have surely the entire universe when I fancy that I have merely a fact-section, a rose or a sparkling drop of morning dew. That veiling does not mean efface-

ment is a point that I have already pressed into notice before. Veiling, therefore, is essentially a question of quantity, orders. We have accordingly to discriminate between a maximum veil and a minimum. When we took away the veil from over the unrelenting concrete we merely suggested, as the amending conception given above has shown, that the veil is cast over the unrelenting concrete with so very impalpable thinness that we hardly commonly suspect it : we feel apparently that we have all and nothing is kept back from us. But is this the whole thing that we feel or believe concerning it ? Do we not also believe, more or less distinctly, that the world we have, though unbounded in one sense and direction, is limited in another, *viz.*, by possibilities ? Do we not also believe that the whole we have, though undoubtedly all given in the same order and tone throughout, that in the continuum we have places and features that are *more* distinctly given and others that are given *less* distinctly ? If we do, then the veil cannot be wholly transcended in the unrelenting concrete : here is merely a close approximation to the condition of perfect unveiling and openness.

Again, let us suppose that $U_1$ is that aspect of the unrelenting concrete which we commonly call our objective universe. Has not this $U_1$ its characteristic habit and aptitude ? Can my objective universe accommodate anything and everything that comes to my consciousness ? Why does my objective world accept only certain presentations and

reject others ? Why do I believe as objective the revelations of a spectrum, and dismiss as merely subjective my surmises and dreams ? Is this because my objective world is partial to a certain order of presentations ? In the objective world itself presentations may not be all equally well received. The microscope may yield a materially different view of an object—different from what is presented by the unaided eye : here there are two presentations regarding what I believe to be one and the same object. Now, are these two presentations equally accepted by the order of my objective experience ? No : this order of experience is decidedly partial to one of the presentations. This is its habit and aptitude. Every aspect and segment of experience is predisposed to assimilate certain other segments of experience, and reject certain others.

Assimilation and quiescent association are expressions that require a bit of explanation. Suppose $x$ is the sum of general conditions which determine the objectivity of a given aspect of experience : it is regarded as objective because of $x$. Hence we may appropriately say that $U_1 = \phi(x)$. Let a new presentation, P, come. This P will be assimilable if it is also a function of $x$. Between $U_1$ which is already there and P which newly arrives there may doubtless be a difference, but this difference, must exist inspite of the common and general determinant of objectivity, viz. $x$. Adopting the conception of 'family' we may

lay that $U_1$ and P belong to the same family if they are mutually assimilable experiences : and is family is $\phi (x, c)$, where $c$, as explained in a evious section, is the parameter of the family. 'e can distinguish between two members of the mily, $U_1$ and P, by assigning different values to · but though distinguishable they are kindred nd mutually assimilable experiences on account f the general determinant condition $x$. Every rdinary experience is known to possess a family ptitude.

Again, let $U_2$ stand for that aspect of the bjective world which we commonly distinguish as the world of popular belief and acceptance from the verified and verifiable world which exists for science. In the world of popular acceptance the earth is a stationary planet round which the sun rises, moves and sets, the whale is a fish, and so on: while I am in no mood for philosophising I do not challenge the deliverance and verdict of my senses, and easily take things and processes as they appear. Now, evidently what is acceptable for the world of commonplace belief cannot always be acceptable for the world of science. The two worlds, though both are taken as objective, materially differ therefore as regards their aptitudes. If $U_3$ is the objective world of science we have :

$$U_2 = \phi (x, y),$$
$$U_3 = \phi (x, z).$$

The general determinant condition for objectivity appears in the expressions for both. The condi-

tions for the special aptitudes of the two worlds have been respectively denoted by the determinants $y$ and $z$: though both are objective worlds they are not the same kind of objective worlds they are different orders so far as $y$ and $z$ are concerned, but of the same family so far as the general condition of objectivity, $x$, is concerned. The rising and setting of the sun are commonly believed to be objective phenomena just as the dark lines in the solar spectrum are. The sub-families, $U_1$ and $U_2$, may be represented by the expressions $\phi(x, y, a)$ and $\phi(x, z, b)$ respectively · the parameters, $a$ and $b$, will discriminate the various members of the two families respectively. The explanation by families is not a whit more enlightening than the explanation by assimilability but I venture to think that this is a more lucid manner of statement.

We have now seen the meaning of habit and aptitude as inhering in the various orders of our universe of experience. Now, what does habit and aptitude essentially imply? Habit implies a relatively permanent line of selection. To say that it is the habit of A to associate with B is to indicate a relatively permanent manner in which A chooses its partner out of any number of its acquaintances in the world of experience. Habit is thus a fixed predisposition which tends A to accept and associate with B and to reject and ignore the larger group in which B may be presented. Out of the group BCD..., A associates with

}and dismisses with hardly any notice CD.... Thus it is the habit of the magnet to associate with iron filings: this is its selective preference. Thus it is the habit of a living organism to assimilate its own appropriate food, and of a growing crystal to take up its own appropriate molecules. In chemical combinations also substances show their mysterious selective preferences, and lately we have been endeavouring to show how our world of experience itself in its various aspects and orders vents its fatal predispositions. The aptitude of the fact is the basis and type of the habits of the magnet, crystal, amœba and the mental nature, Now, does not the aptitude of the fact presuppose veiling or ignorance? Surely A must somehow ignore CD...in the entire group in order that it may associate with B. The group may be either actual or possible: A may select B out of a mass of actual presentations, or A may associate with B selected from among an infinite fund of possibilities. Why should the baby stretch its hand to grasp the burning candle before it? Because it is the habit of its organism to react in a particular manner when it is acted upon in a particular manner. Why should the magnet attract iron and not particles of sand? Why should the given cause be followed by a given effect, a given character objectify itself as a given conduct, a given equation associate itself with a given curve? In all these cases we may push our enquiry somewhat deeper no doubt, but at bottom it must

be plainly seen it is a question of aptitude and selection. We may suggest a mechanism to explain the behaviour of the baby referred to before; we may attempt to reduce magnetic attraction to a case of circulating currents of electricity: but by these explanations the mystery of action and reaction is not removed but pushed only a little way back. Action and reaction are at bottom only a question of selection, ignorance and acceptance. The explanation of aptitude by veiling does not simplify matters indeed: the mystery is as deep in habit as it is in veiling. Habit may be conceived as applying to the veil itself. Why should a given continuum be veiled in a certain manner and accentuated in a certain manner? This presupposes occasion or causation, and occasion or causation presupposes habit. Thus while we try to explain habit as a relatively permanent manner of ignorance and acceptance, we cannot apparently explain ignorance and acceptance except by dragging in the habit of the fact itself. This cycle in explanation is inevitable so far as an attempt at understanding the veil itself is concerned. The veil cannot be understood: there is possible no consistent and rational theory of the veil. The veil cannot, however, be explained *away*.

To return to our Principle of the Curve. This principle is only a special manifestation of the principle of Habit. Why should experience grow at all? Why should we not have in the life of experience merely uncompromising A's and not-A's

merely logical contradictories, utter denials and differences? Why should our universe of experience be a cosmos and not a chaos? The growth of experience presupposes, as we have seen, transitional forms of contradiction, synthetic categories to negotiate between downright opposites. Between absolute A and absolute not-A (assuming for one moment that such absolute contradiction is possible), there must intervene such transitional forms as 'identical with A', 'similar to A', and so on. Even the categories evolve in a sense. Now, such an evolution of experience necessarily implies habit. Can we really explain without appealing to the inscrutable habit why an experience should grow after the manner of a curve? The equation of fact and the curve of fact go hand in hand as we shall see more fully later on. But we find in the meantime that we cannot otherwise express the curve of experience than by saying that it is the *habit* of experience to grow as a curve does. This is no uplifting of the mystery, but rather a frank admission of it. To the relation between the Principle of Habit and the Principle of Veil I have already alluded. Curve, Habit and Veil are conceptions that are chasing one another in a cycle: each presupposes the others and each is primordial. How can I select and associate with without ignoring the mass from amidst which I choose my partner? This brings out the dependence of Habit on the Veil. Again, why should I select and make match at all and

not be impartial to the whole unrelenting concrete (this expression I have been lately using for my entire universe at any moment); and if I must select at all why must I select B, for example, out of the actual or possible group B C D......? In other words, why is there ignorance and acceptance at all, and also ignorance and acceptance in a special manner? This shows the dependence of the Veil on Habit. Lastly, experience not only ignores and accepts, but its ignorance and acceptance is ordinarily always governed by a law, or the Law of Curve. This brings out the curve as fundamental. The fundamental law of fact-operation may thus be stated as a *triangular cycle*

$$\mathbf{V}^{\mathbf{C}}_{\mathbf{H}} \cdots\cdots\cdots (1).$$

The life of the fact cannot be adequately explained without bringing in this triangular cycle. Three fundamental conceptions are involved in this cycle Presentation, Veiling and Movement—**P**, **V** and **M**. This latter is also a cycle

$$\mathbf{P}^{\mathbf{M}}_{\mathbf{V}} \cdots\cdots\cdots (2).$$

The cycle **PMV** will readily explain itself. A continuum of experience is ***presented***: it *moves*: it is *veiled*. I have called them a cycle because of their mutual dependence. Presentation presupposes both movement and veiling. Suppose $C_A$, $C_B$ and $C_C$ are three successive conditions of the continuum, where A, B and C stand respectively for their pragmatic nuclei. Now, the presentation of

B, the pragmatic nucleus in the second, implies the passing away of $C_A$ and the veiling of the whole in $C_B$. Nothing can be known as *presented*, thought as appearing, which not known or thought as coming after something which was there but which has ceased to be: the full conception of presentation undoubtedly involves an order of time, a thought of something going out and something coming in: in intuition where experience is simply given it is not *taken* as presentation. Order of Time is of the essence of the *thought* of presentation: apart from this order we have no presentation but only existence. Again, to know that B, the fact-section in the second, has been presented we must in some fashion ignore the whole: surely to know that $C_B$ has been presented is a condition of consciousness materially different from that which knows that B has been presented.

Movement also presupposes both presentation and veiling. Suppose ABCD are the different positions in the progress of an object. What is the condition that I may know the object moving from A to B, and from B to C, and so on? While the object is in the position A I have a certain presentation; now this presentation must go and something else must be presented before I can know of movement at all. To have the statical unrelenting presentation of A means the impossibility of any knowledge of movement. A different presentation must come; I must ignore my whole

fact during the interval ; while actually emphasising my continuum at B I must in some way recall A and bring them together in thought (though even in such bringing together the emphasis continues on A) : all these at least are necessary before there can be possible in me a knowledge of movement from A to B.

Lastly, veiling presupposes both presentation and movement. That something must be presented before it can be veiled is clear enough : of course I take 'presentation' here in a somewhat extended sense as including both 'being' and 'appearing.' But how does veiling imply moving ? When I have a continuum of experience $C_A$ I have a certain presentation : if this is statical, quiescent and unrelenting it cannot obviously be veiled at all, and the pragmatic section A accentuated and abstracted. Surely $C_A$ is a materially different condition of consciousness from A, where the whole has been put equal to zero of ignorance. Now, the first condition must partially shrink back and a new condition must come in order that the operation of veiling may be at all possible. What is this shrinkage of one condition and coming of another but essentially movement ?

We have now seen the cyclic nature of presentation, movement and veiling. Their mutual implication and dependence appear to be fundamental. The full import of each necessarily contains the other two ideas. From this circumstance we derive

one advantage. We need not consider presentation, movement and veiling as *three* principles, but as three elements or aspects of *one* principle which we shall continue to call the principle of veiling. **PMV** appears to be a complete statement of the fact-operation: in relation to this therefore it may be looked upon as concrete. *a* is concrete in relation to A if we believe that A has been completely represented in *a*. Now, curiously it is by an application of the Veil itself that we abstract different elements or aspects of the fact-operation, and set them up as different operations. The operation is not synthetic but organic, if I may use this suggestive distinction. *The* operation is represented in thought as operations: Stress is conceived as action and reaction, tension and pressure, and so on.

The section has been long, but have we been nearer for all this to a definite conception of the veil as a quantity and a variable? Are veiling and unveiling absolute operations, never admitting of a *more* or *less*? We have seen how a thing passes into its opposite not abruptly but through countless shades of intermediate forms. The question may be seriously raised as to whether development or change in the life of the fact can ever really be discontinuous. Does not a continuum $C_A$ in becoming $C_D$ pass through all intermediate values? Physical or mathematical continuity is a *relative* circumstance: a function of $x$ is said to be continu-

ous between two values of $x$, $a$ and $b$, *if* between these limits each increment, however small, in the value of $x$ produces a corresponding increment in the value of the function, and *if* the function does not take an infinite value for any finite value. Clearly, this conception of continuity is hypothetical. For example, we consider the continuity of a curve in reference to a system of values given to the co-ordinates. In the science of fact continuity may be taken either categorically or hypothetically. If the continuum of experience continues to change, no matter in what manner, we have continuity of fact-development. If the continuum of experience remains unrelentingly statical, continues *not* to change, we have also another kind of fact-continuity. Both these kinds of continuity I may call *categorical*, since in neither is there an apparent reference to a special system of values. Previously I have considered in some manner of fulness how fact-continuity may be taken in relation to a given interest, object or emphasis of experience (impression or idea). Thus a fact may be continuous in reference to a particular interest, object or level of emphasis. Mathematical and physical continuity surely belongs to this latter order. Now, in the categorical sense change or development in the life of the fact is not ordinarily discontinuous: life is seemingly a ceaseles flux. We have no ordinary experience of *quiescent* continuity.

But suppose we take continuity in an hypothetical sense. Let my experience pass from one

interest $I_1$, to another $I_2$, or one object $O_1$ to another $O_2$, or from *s*-emphasis to *i*-emphasis. Is any absolutely sudden transition possible? Can consciousness pass at once from A to not-A, which is not merely logical contradiction but the opposite, utter denial of A? Is there not something like a continuous curve, a gradual shading off, between A and its opposite? Logically something and the closest approximation to it are unquestionable A and not-A: but we are not enquiring about this. Is there really a fact-gap between two things which life and common sense accept as opposites; I believe that there is none. Life's pragmatic interest operates even in representing the *flow* of experience: we care not for all the countless shades linking every A and not-A of experience together: only those portions of the flow, those aspects of a transition, which interest us are selected by us—the entire flow itself we commonly ignore. Here therefore is also another case of the veiling of the whole and accentuation of parts. Thus I have A succeeded by its opposite not-A, not because the actual process of experience has been from the one to the other, but because we are not interested in the links between them and therefore have, in a distinct sense, ignored the whole operation. From pushpin to poetry may be a far cry: but the far cry exists not in my experience itself, but in my common and practical account of experience. The 'one o'clock gun' may come as a surprise upon my reverie and utterly

demolish it : one presentation abruptly ceases and another suddenly bursts into my awareness. Is this not really an exception to the principle of curve as applied to the life of experience ? But even in a case like this the two presentations are regarded by me as utter opposites, because I have involuntarily accentuated the two maximun positions of the curve of experience and have ignored the curve itself : I have mistaken two successive crests of a surging wave for the wave itself. Try to picture the whole concrete beginning with a reverie and ending with the commotion created by the 'one o'clock gun', and perhaps it will not appear as broken by so much suddenness or precipitation

I shall not dwell further on continuity here But I shall ask this : Is the operation of veiling and unveiling a treatment with uncompromising contradictories, a transaction with mere A and not-A ? Is a continuum or a part of continuum either all veiled or all unveiled ? Shall we not admit cases of more veiling and less veiling ? We have seen already that the categories of identity, similarity and otherness all imply an application of the veil : it is by dexterous operations of the veil that we can make the alogical fact-stuff yield us all categories for thinking. The gradual slope of ideas from sameness to otherness is understandable only with the principle of ignorance and accentuation. Now, is not this gradual slope, the continuous curve, attributable to the veil itself This is a question that can be settled only by an

appeal to reflection. Suppose I have at this moment an experience of morning: the garden in which I am sitting has been bathed in the freshness and joy of morning sunshine: it is a lively spectacle to which my soul is treated now. Now, does my universe of the present moment involve a veil at all? And if it does, is there a shading off of the veil from some places to some others, from particular features to particular others? Undoubtedly, my universe is not homogeneous so far as the distribution of psychic tone is concerned: I have places of strongest emphasis and also places of least emphasis, and between these positions of maximum and minimum tone there are spread zones of gradually varying tone. There is nothing obscure in this account of the universe so far. But what we have regarded as the varying distribution of psychic tone over the continuum seems to bear no clear relation to the incidence of the veil. The psychic tone varies from feature to feature and from place to place: shall we assume that the veil varies *pari passu*? What necessary connexion is there between the veil and the psychic tone? Surely, the nature of the veil as a quantity will hinge upon the answer that we may find to the question.

We shall do well to consider for one moment the connexion between the principle of the veil and the principle of presentation—between **P** and **V**. In a continuum of experience there are generally a multitude of features presented: ordinarily we

have no knowledge of absolutely simple and homogeneous feeling. I may be partial to some of the features of the given multitude, may take them warmly and cherish them fondly : in regard to the rest of the mass I am cold, indifferent, not at home. But surely I cannot mistake or ignore their knock at the gate of consciousness. The whole multitude *is* given, and given in consciousness. I *have* possessed even what I have apparently ignored. This sort of possession in consciousness, without reference to the kind or degree of possession, I may call *bare presentation*. Possibilities may have been shut out in my universe of the present moment : it is only *an* actual out of a multitude of *possible* worlds. But considered as an actual universe only, there is *no* veiling if we confine ourselves to the bare presentation of the universe in consciousness : it is all presented. It is clear now that veiling is opposed to *bare* presentation. To be presented in consciousness is not to be veiled, and to be veiled is not to be presented in consciousness. But bare presentation is only an abstraction in our ordinary life of experience : a particular feature in experience is not merely presented, but presented in a particular manner and degree. The pragmatic nucleus of a tissue of experience is presented as well as the most vaguely apprehended features concealed in the shade of semi-attention. As regards bare presentation there is no difference between the two ; and if we take veiling to mean the opposite

or contradictory of *bare* presentation, then obviously no veil is drawn *over* the continuum, though of course we may conceive a veil to be still hanging *about* it in as much as its infinitude is limited —is believed by us to be limited—by the realm of possibilities. If I have ignored anything I have ignored what I think it is *to be*, and not what I know it actually *is*.

Now, what is it that we really mean when we say that there has been a varying distribution of psychic tone over a given continuum of experience? If $C_A$ and $C_B$ are two features which have different psychic tones, can we rightly regard that they have been differently *presented?* It behoves us to reflect for one moment if the difference of psychic tone should properly be regarded as a difference of presentation. Presentation can be taken either in an abstract or in a concrete sense. If presentation were to mean the circumstance of something being given in consciousness, it would be abstract, for we are overlooking the *manner* in which the thing is being given. In this abstract sense I have a presentation of the morning now. I ignore *how* the morning is being presented. It is by ignoring the concrete fact of the moment that I believe I have the presentation of a whole landscape. Undoubtedly I have the whole landscape in my consciousness—though it must be readily seen that the landscape is only an aspect of the concrete fact, is a limited aspect of a universe of experience which is boundless in a sense. But

have I the whole landscape as a homogeneous stretch of awareness? Do I not feel my consciousness of the scene is more intense, more vivid, more tonic at some places than at others? Pure consciousness is indeed impartial: there is absolutely no difference between $C_A$ and $C_B$ so far as mere awareness is concerned. But in actual feeling I surely ascribe degrees of intensity to my awareness as distributed over a complex continuum. I mysteriously feel for example that $C_A$ has been more vividly or intensely given than $C_B$. We need not attempt an analysis of this feeling of varying intensity: whether belonging to the essence of awareness or not, this feeling is ordinarily always there: commonly always we discriminate between a clear and a vague portion of a presented continuum. This we regard as the manner of presentation. And when we take a presentation along with the manner of tone or intensity which we have been considering, we take it in a concrete sense. It is clear now that in this concrete sense, a presentation is a variable, a quantity. In this sense, therefore, it may be allowable to speak of a *more* or *less* presentation.

This being conceded, we see readily enough how we can pertinently speak of a *more* or *less* veiling also. Presentation and ignorance are respectively positive and negative circumstances. If I take presentation in an abstract sense, *viz.*, in the sense of being barely given in awareness, then

veiling, taken also in an abstract sense, may be regarded as the negation of presentation: to be presented is not to be veiled, and to be veiled is not to be presented. In this sense, as we have seen, no veil need apparently be recognised in a given universe of experience: the entire *actual* universe is all given, all presented. But *how* given or presented? Is the mysterious, though intuitively apprehended, tone of presentation homogeneous throughout the whole universe of fact? Whatever may be the real psychology of the tone, it is not certainly felt and regarded as uniform, impartial. Now, if in this concrete sense presentation is a variable quantity can we not take veiling, which is its opposite, as a variable quantity also? Indeed, in the concrete sense, presentation and veiling are but two aspects of the same circumstance—the positive and negative aspects respectively; so that to every *more* of presentation there corresponds a *less* of veiling, and *vice versa*. At the pragmatic nucleus of a fact we have most presentation and therefore least veiling: in the dim borderland of my universe I have—I feel and believe that I have—least presentation and therefore most veiling. In concrete life accordingly, the question of presentation and veiling is clearly a question of maxima and minima: to every maximum of the one there corresponds a minimum of the other. The relation between presentation (**P**) and veiling (**V**), both regarded as variables, may be represented by the following symbolical expressions:

$$\text{Lt } V = 0\ \mathbf{VP} = \text{Lt } P = e\ \mathbf{VP} \quad \ldots\ldots(1)$$

$$\delta P = -\delta V \quad \ldots\ldots(2)$$

$$E = \lambda.\ \frac{V}{P} \quad \ldots\ldots(3)$$

$$\text{Lt } V = \infty \mathbf{VP} = E^{V} \quad \ldots\ldots(4)$$

These four relations are important and will require explanation. The two limits in (1) mean respectively the limit of evanescence and the limit of excrescence ($e$). Since veiling and presentation vary inversely as each other, the limit when the former becomes evanescent will evidently be the limit when the latter becomes full or complete: a condition of consciousness of no veil or minimum veil is also the condition of consciousness of all presentation or maximum presentation. Let me take for experiment my universe of the present moment and gradually think away the veil. The dimly lighted, vaguely apprehended, portions of the universe begin to glow up; the hovering shades are chased out of the field, and I have a homogeneous incidence of tone throughout: the universe is equally presented in all its parts and features: I do not find any palpable discrepancies in the degree of presentation. If I had been partial to a particular star, I am now unstintedly and scrupulously at home with my whole universe of sights, sounds, smells, touches and the like. This is a sort of universe which our conceptions cannot easily depict. A condition of *all* impartial presentation of an experience, with no varying degrees of tone involved is not one to which we can ordinarily approximate

closely. Giving up all special preferences, interests and motives, I may abandon myself to the fulness of my conscious life: this surely is an attempt in the direction of pulling down the pointed eminences of psychic tone in a continuum of experience. But still it is not ordinarily within our competence to level down the eminences altogether and bring about in consciousness a condition of presentative homogeneity: life can never cease to be partial. In order that presentation may reach the limit of excrescence, another condition besides the one explained before must be fulfilled. Any ordinary experience is a relative disposition of the two conditions **V** and **P**. The former belongs to an experience and conditions it in two ways as has been suggested before: my actual world is believed to be limited by the realm of possibilities: it does not shut out the category of becoming or growing. I believe more or less vaguely that there is a "far-off divine event" to which my universe of experience is moving: that Realm of Ends I think has been veiled in some manner from my knowledge. Now, the reduction of **V** to zero in the combination **VP** will mean not only that my actual presentation becomes homogeneous in tone or intensity throughout, but also that my actual becomes the quiescent, infinite all to which no bounds, actual or possible, can be set. In short, my universe becomes the eternally realized Fact in the World-consciousness of which I have lately spoken. The meaning of V-evanescence or of P-excrescence

has now taken clearer outlines. Briefly, the reduction of the veil to zero will mean a condition of consciousness in which presentation is uniform and not variable, and which is infinitely and statically actual : it is a state of no partialities, *monotonous*, of no suggestions and possibilities, and therefore insufferably dull from the human point of view. It is a life of no quest and all satisfaction—a condition of existence to which we have timidly referred from time to time in considering the mutual relations of $\alpha$, $\beta$ and $i$. I will only add here that such a life is utterly inconceivable by us. In moods of so-called indifferent abstraction, when all special preferences have become flat and dull for one moment, I come more or less near to the condition of homogeneous actual. The question of life, it may be fairly admitted, is a question of continuity and limits. Our ordinary experience is continuous and it will bring us to a certain limit : but does experience cease beyond this limit? Is ordinary experience the only possible experience and the limit of ordinary experience an absolute limit? In the case we have considered above we have V equal to zero—a limit to which nothing corresponds in common experience—and P equal to full quiescent real to which also our matter-of-fact of life can present no counterpart.

The relation (2) only brings out the positive and negative aspect respectively of presentation and veiling. In accordance with the classical notation of Lagrange let us denote elements of two processes

by $\delta$P and $\delta$V respectively. Then, we have the following relation: Every small increment in the tone or intensity of presentation means a correspondingly small negative increment in veiling: when a feature has been *more* clearly presented, it has been *less* densely veiled: indeed as has been suggested before presentation and veiling are but two aspects of the same operation. We are considering them separately because they are *two* aspects nevertheless: there is all the difference in the world between something being given and something not being given. Now, suppose $x$ is the condition of which both V and P are consequences or functions. $C_A$ is presented in a certain manner and veiled in a certain manner because of a certain root-cause which we do not know. Then, representing as usual the true measures of the variations of V and P by differential co-efficients, we have

$$\frac{dP}{dx} = -\frac{dV}{dx}.$$

This means that as the ground-cause changes the resultant variations of the dependent variables, V and P, proceed equally and in opposite directions. We must not suppose that the two operations will neutralize therefore. They are not *two* equal and opposite operations. They are one and the same operation regarded from two different points of view: psychologically the thought of something being presented and that of something being veiled are different thoughts, and hence our justification for putting apart the two aspects of the operation.

Again, suppose we take a certain feature in an experience and ask with regard to it : How much tone of presentation has this feature on the whole in the continuum ? When inverted this question becomes : How much veiled on the whole has this feature, *e.g.*, a cluster of stars, become in the continuum ? It is surely for direct reflection to find out the meanings and mutual relations of these two questions. Let us bring in a common determinant also here. Then obsiously we have

$$\int \mathrm{P}\, dx = -\int \mathrm{V}\, dx.$$

Let our continuum be an objective field in which light or electricity is variously and continuously distributed : suppose also that the tone of presentation in this case is restricted to the intensity of the energy over the field. Then, the foregoing integration reduces itself to a total calculation of the energy as distributed in the field. The two psychic integrations illustratively given in the preceding sections are special applications of the operations indicated on the left or on the right side of the last equation.

In equation (3), what does the ratio V : P mean ? The analogy of Q : S will throw light on this ratio. Suppose we fix upon a standard of presentation ; then the degree of the presentation of a given feature of experience will evidently be determined by the ratio of the amount of veiling and this chosen standard, P. To what extent has the standard presentation been veiled in the ex-

perience in question? This ratio I may call *relative veiling*, or veiling in relation to a chosen standard of presentation. Now, if $\lambda$ be the determinant factor which makes an experience possess a certain *qualitative* character, then evidently the experience can be represented as regards its qualitative and quantitative character as in the equation (3). The factor $\lambda$ determines the quality of the experience (E), and the ratio expresses the degree in which the quality has been presented measured in reference to a chosen standard of presentation. We shall see later on if we can get at an absolute standard of presentation. Let us in the meanwhile apply this principle to the objective world: I will take only one instance here. Let M and $m$ be two masses of material substance, and D be the distance between them. Then the stress or mutual attraction between the two masses is given by Newton's Law—

$$S = \frac{Mm}{D^2}.$$

Now, this relation can be reduced to the type given in (3).

Here $\lambda$ gives us the qualitative nature of the stress between the two masses, *viz.*, that it is a mutual attraction. This is Newton's first Law of Gravitation. The expression on the left-hand side of the last equation gives a quantitative *measure* of the stress. This is Newton's second and third Laws of Gravitation combined. With regard to the stress we have to ask two things: What is the

*kind* of stress between the two masses? And what is the precise *measure* of the stress between them? Clearly, in determining the actual measure of the stress we have to employ a standard of mutual attraction, *viz.*, attraction between *unit* masses at a *unit* distance. The actual measure of the stress must be only a function of this standard. Hence the type of the operation is just what has been laid down in (3): it is a combined question of quality and quantity. The question of quantity again, it may be observed in passing, is a question of relative veiling. In determining any measure we have to consider a unit, a standard of reference. In $\frac{d\alpha}{dx}$ and $\frac{d\alpha}{dy}$, the standards of reference are $x$ and $y$ respectively. Now, the actual measure is only a function of the unit or standard of reference employed. Any function, $y$, of a given independent variable, $x$, presupposes in its conception an alternate veiling and ủnveiling between itself and its independent variable. A plane curve, for example, $y = \phi(x)$, cannot be conceived without imagining the veiling and unveiling operation. To conceive $x$ as suffering an increment $h$, is to shift regard from $x$ to something which is not $x$: thus is $x$ veiled. Again, to conceive $x + h$ as an increment of $x$, my regard must not forsake $x$: $x$ must continue in thought as the starting basis and point of reference. Generally, therefore, the thought of anything as a function of some other thing involves an alternate play of regard, veiling and unveiling, between the

two things. We shall see in a later section how all fundamental mathematical operations involve the veil.

Take again the perception of an orange. This perception involves a qualitative as well as a quantitative expression. There is the yellow surface, but how much yellow? There is the round shape, but how round? And so on. Generally also, we may ask this: Assuming that the orange stands for a certain kind and measure of presentation for a normal subject under normal conditions, what actual proportion of that standard presentation have I as I am now perceiving the orange? If the kind and measure of presentation for a normal subject under normal conditions be our common standard of truth, I may enquire as to what *extent* my perception of an orange at any moment is true. Again, taking the orange as it exists in and for the World-consciousness as our pattern of absolute truth, we may enquire as to what extent the scientist's or the layman's knowledge of the orange at any time falls short of the ideal. This question therefore clearly reduces itself to one of relative veiling, or what is the same thing, relative presentation.

The equation in (4) represents a condition of veiling which in our ordinary life is not apparently conceivable. But ordinary life is not the only possible life for us, and the limits of ordinary life are not absolute boundaries. We shall be ill advised to reject the extraordinary cases. What

is the condition of experience when the veil instead of becoming evanescent becomes infinite and all pervasive ? Will this mean the absence, the blotting out, of all presentation ? Is the life of *all* veil a life of *no* presentation ? On the left-hand side of the equation (4) I have put $E^V$. This means that the all-pervasiveness of the veil will not imply the annihilation of consciousness altogether which is impossible: experience as such can never be put equal to zero as we have seen. It will mean that we have a consciousness or experience of the veil itself, of nothing except the veil. Such pure experience of the veil is of considerable metaphysical importance. There is all the difference in the world between no experience and experience of nothing, between veiled experience and experience of the veil. This latter will mean a condition of experience in which the order of the universe returns as it were to a state of chaotic mist or primordial nebula. In profound sleep and in certain abnormal conditions do we not come very near to a pure experience of the veil, $E^V$? The question of course is not free from difficulties : indeed there is considerable temptation to regard the apparent mental void of profound sleep as a case of dreams forgotten, lapse of memory. A similar explanation might be suggested about the abnormal conditions referred to before. But two cases, which I have already alluded to previously, will I think throw an amount of light on this curious question of a pure experience of veil. The

experience of *just* going to be asleep—when the solicitations of the senses have been fast languishing and dreams are not yet in evidence—is the nearest ordinary case of no dispute that we possess, nearest perhaps to the condition of all-pervasive veil. This shading off between wakefulness and dreaming has to pass through a neutral zone of *no particular presentations*, a condition of relational zero. The soul in passing from one order of presentations to the other is thus for a while face to face with the Mother-Veil from the womb of which all things spring out and into which all things return. Let us imagine the condition of going to be asleep as it is being consummated. My world teeming with infinitely various presentations is steadily dissolving, as it were, into a psychic nebula: from definiteness to indefinitiness, from variety to homogeneity, the condition grows: special preferences are lulled into apathy, emphasis falls flat and even. While the one order of presentations is in evanescence, the other order is not yet in the forming: this is the interesting dead-point between one order and another. Now, as we are witnessing the gradual dissolution of our universe into a fluid of all-pervasive mist, the question naturally strikes us at once: What becomes of our universe *in the limit*? What becomes of our world when special presentation has sunk down to a minimum?

Thus we can imagine a pure presentation of the veil, unrelieved by any special presentations, when

the limit has been taken, in the experience of just going to be asleep. As I have admitted the question is not free from difficulties, and I cannot pretend that these have been all or materially removed by bringing in the limit. The limit, however, will render my suggestion in some fashion imaginable. I have employed the notation $E^V$ for our experience in the limit when all special presentations are imagined to have dissolved in an all-absorbing veil.

The analogy of this last notation will naturally tempt us into another—$E^P$. If in the life of experience we may come to a limit where we have a pure consciousness of veil, may we not come to a limit where we have a pure consciousness of presentation? Pure consciousness of presentation may mean either of two things. It may mean the consciousness of pure, homogeneous presentation in which no special features have appeared. It is *bare* presentation with no differentiations appearing in it. Or it may mean the consciousness of presentation on which no veil is apparently incident special features there may be in it, but there is no differential presentation of the special features. Both cases are equally inconceivable from our own point of view. To which of these cases, we may ask however, does our experience of *just* going to be awake approximate in the limit? Is there not also an inscrutable borderland between the world of dreams and that of wakefulness? Do we not in

passing from the former to the latter step across a neutral zone where dreams have melted and lost their features into a bare, homogeneous presentation of existence, and objective sights, sounds and smells, their associated ideas and memories, have not yet begun to put their constructions on the shapeless mass of awareness? In plunging into a world of shades we have had the pure veil in and about us for a brief while: in returning to the world of 'realities' should we have not pure presentation in and about us for a brief while also? Presentation is the veil inverted, and I have suggested that in the inverse operation of just going to be awake our experience is $E^P$ instead of $E^V$.

Before passing on to the next section I should like to point out that the neutral zone or dead-point in experience is not a quite grotesque conception. It is idle to seek to explain the affairs of experience by the affairs of the brain: the brain as a part of the objective universe is only a part of the concrete universe of experience, so that to explain experience by the brain is really to explain the whole by a part, the concrete by an abstraction. Nevertheless, the whole lives in a part, and we may detect in the part a significant index to the life and nature of the whole. The parallelism of the brain and the mind is useful and instructive in this way. In the study of the brain we may discover a key which we may apply to the interpretation of experiences. Now, in the physical universe we have a quiescent or neutral point just after a movement in any line or

manner has completed itself and just before a movement in the opposite line or manner has begun. Every process, before it is inverted or reversed, takes a pause, a condition of apparent equilibrium. In harmonic motion, such as that of a pendulum, the quiescent positions are found and explained: in the career of a pebble thrown up into the air the quiescent point is found and explained also. The quiescent point is the position where a variable impulse in one direction has been balanced by a variable impulse in the opposite. This principle is of universal application in the material world. Wherever we have the operation of two tendencies, opposite in direction, one gradually decreasing and the other gradually increasing, we are bound to come to a position where process in one line is just balanced by process in the reverse line. The career of the pebble is not an instance of harmonic motion, that of a pendulum, or of a particle in an wave-motion, is: but in both instances Science has not searched in vain for quiescent periods and positions. In the activities of the living tissue we have essentially to deal with the resultant motions of an assemblage of molecules, and surely it cannot be hopeless to detect amid these resultant motions pulses of rhythm. The life of the living tissue is rhythmic: we have processes and reversion of processes in this life. Now, is there not a relatively quiescent period between a given process and its reversion, between a pulse of contraction and a pulse of expansion for example? The living heart

and indeed every living tissue, is continuously throbbing ; but does the heart not take a moment's respite between a contraction and an expansion? I need not pile instances to illustrate so common-place a circumstance of organic being as rhythm. Now, the question that arises is this: Does the brain whose states are admittedly parallel to those of experience enjoy any periods of comparative quiescence? The brain is undoubtedly a system of most unstable tensions: it is continuously in agitation. But are there not moments of respite also? Now, on *à priori* grounds I believe that the brain has a tendency to return periodically to conditions of minimum agitation: a condition of *no* agitation is of course unthinkable. This condition of minimum agitation can be artificially induced also the influence of certain drugs, for example, may bring about such a condition: there are also other and sounder methods of inducing it as we shall see in dealing with the methods of mysticism. The condition is also natural to a certain extent in the life of the brain. At any rate, the condition of cerebral commotion is a variable, and can accordingly be graphically represented by a curve with maximum and minimum positions. We have as yet no accurate physics of the brain: but none the less certain fundamental propositions of brain-dynamics are indisputable. The curve of brain-activity is one of those fundamental truths. The question of more vital importance is, however, this: Does the minimum really sink so low that the general

condition of the brain may be regarded as a comparative equilibrium of tensions, and therefore the corresponding experience as a condition of relative quiescence? There may be differences of opinion as to the extent or depth of the minimum; I should think however, that in the life of the brain there are periodically states of comparative rest, and to such states correspond the experiences of just going to be asleep and just going to be awake. My treatment of the cerebral aspect of the question has been meagre, but as I have said, I do not lay much stress on this aspect at all.

In this long section we have been endeavouring to study the veil as a variable. We have seen how it is connected with presentation. In the four equations given and explained above we have perhaps something like a precise statement of the connexion. We may note finally that not only does the differential distribution of tone over a given continuum require the veil as a variable, but the very conception of *degree* requires it as a variable. Indeed it is the degree of the veil that makes anything appear as a variable at all. For, degree and variable presuppose a standard of reference, and nothing can be known as a variable between which and its standard of reference there is not an alternating play of veiling and unveiling; my regard must oscillate between the standard and the object and a new experience must come with its emphasis laid on the focus of the object, but also embracing a more or less veiled presentation of the

standard. To have the standard fully and unrelentingly displayed in consciousness is to rise above the thought of degree or variable. To have the object fully and uncompromisingly manifested in consciousness means our intuitive absorption in the object and in the magnitude of the object, but no representation of the magnitude as a variable or degree. To have such a representation both the object and the standard we must somehow bring together in thought, though the emphasis of the thought will lie, as suggested a moment ago, on the object-feature of the continuum. Thus, symbolically we have

$$R'd = C_{(so')}d,$$

where the right-hand notation means the representative thought (R′) of degree (*d*); the left-hand expression means a continuum (C) involving the two foci, standard (S) and object (O), where the emphasis of regard has been laid on the latter. The accent on the two sidesh as to be interpreted differently. *d* on the left side means that S and O have been mutually accosted with respect to *d*: it gives the reason and nature of the combination. Now, putting successiveiy zero of ignorance for C and S in the left-hand expression, we are left with only *O′d*, which means the thought of the object as a variable.

11. *The Infinite and Infinitesimal Facts.*

Let us recall one of the fundamental equations of the Fact—

$$F' = I^{f}_{1} \ldots\ldots\ldots\ldots\ldots (1)$$

Put $f=0$. The equation accordingly becomes

$$F' = I_{I} \quad \ldots\ldots\ldots\ldots\ldots (2)$$

What is the meaning of this derivative equation? A universe of fact may be commonly represented as an infinite continuum, accentuated in finite features, and forming a unity, a system. Now, if I ignore for one moment the finite features ($f$), I only remove their special accentuation and merge them in the unbounded continuum. I commonly take my universe of fact as finite because I ignore the whole and accept in thought only the accentuated portions. If now I ignore the accentuated portions, it does not mean that I cease to have them any more than the ignorance of the whole means my ceasing to *have* the whole; it means that I courageously accept my boundless universe as such and refuse to be bound by special preferences in it. It is merely looking the Infinite straight in the face: in the commoner altitudes of life we are uneasy with a mysterious dread of the Infinite in which we ever live, move and have our beings. Life's relaxation in the bosom of the infinite will assuredly mean the suspension of all its small play: its pigmy constructions are safe only in some manner of isolation from the infinite its homes of sand and pebbles are in progress only in the sandy beach from where the limitless sea has for a while retreated. The isolation, the retreat is the magic of the Veil.

The equation (2) means therefore an infinite universe of fact constituting, in all the majesty

of its features, a unity, a system. I am as yet not haunted by a sense, a suggestion, of the realm of possibilities. I complacently take and live my universe as a boundless actual without my eyes searching anxiously for traces of the veil about the eluding horizon. This sort of absorption in the universe of the actual is not wholly an outlandish experience to me. Gazing into the starry heavens at night and surrendering all special preferences I *have* enough experience of the type explained above to consider $I_1$ as quite a normal form of experience.

Of the infinite universe of fact I may notice five types. Some of these types may strike us as extraordinary. Suppose we think away all particular determinations from a continuum of experience; can we imagine that consciousness itself will vanish when all particular determinations in it have been thought away? We have ordinary experiences in which the multitude of particular determinations is considerably reduced: in the experiences of just going to be asleep and just going to be awake we come perhaps very near to the condition of bare consciousness: shall we say that this condition of bare consciousness without any determinations whatever becomes an actual condition when the *limit* is taken? At any rate, two things are clearly impossible: We cannot think away consciousness itself, whether or no we can think particular determinations, modes, in it *completely* away; and we cannot set any

bounds to the stretch of awareness—*not* awareness in relation to particular objects and processes in it but awareness as such. Let us, however, admit the above as an hypothetical case here: I shall especially devote myself to the study of this case later on. Now, the universe of pure consciousness can hardly properly be regarded as a universe at all: the conception of universe certainly involves the idea of system as well as the idea of limitlessness. The latter idea can be applied to pure consciousness, though of course in review; the former idea cannot --neither in intuition, nor in review. For the sake of symmetry, however, let us admit the following:

$$\textit{Pure consciousness} = U_0 \ldots\ldots\ldots\ldots (1)$$

Pure consciousness is the infinite *plenum* in which the universe is born, grows and dissolves. Take for one moment the equation with which we have started in this section:

$$F' = I_1^f$$

Put zero for both $f$ and $1$: ignore or think away them completely. Then, we are left with an infinitude (I) of awareness in which there are no finite determinations and no thought of unity: it is infinitude but no system.

The suffix zero in the notation for pure consciousness shows that it is not a universe at all, but only the absolute possibility of there being a universe.

Shall we next admit what I have recently

denoted by $E^V$ and $E^P$ as constituting another order of universe? The former is the canscious-ness *of* the veil itself and of nothing but the veil; and in so far it is a consciousness *of* something, it ceases to be bare consciousness. Bare consciousness is consciousness without any reference whatever: it is no consciousness *of* anything. The example that I gave of $E^V$ need not be dragged in here to add to our confusion. Whatever the actual counterpart of the form may be, the form with the meaning attached to it as before, cannot be taken to represent pure consciousness. This will perhaps be granted; but how does $E^P$ differ from bare consciousness? This is a consciousness *of* presentation; but what actual difference is there between consciousness as such and consciousness *of* presentation? Psychologically, and therefore actually, the two conditions *are* different I believe. Pure consciousness, to be absolutely pure, must lack a form and a name: it must not know itself even as a stretch of presentation. Presentation means 'being given'; and surely there is a real difference between consciousness which is nothing but consciousness and the consciousness of 'being given.' This delicate distinction I shall more fully deal with when I come to pure consciousness as the special subject of my attention. In contrast with the notations, $E^V$ and $E^P$, pure consciousness may be simply put down as E. Again, however vital the difference may be between

$E^V$ and $E^P$, it is clear that in them both experience takes on apparently a single determination : the former is apparently an experience of veil only, the latter is apparently an experience of presentation only. Accordingly we may put down for our universe of the next order—

*Consciousness of veil only or presentation only*

$$= U_1 \text{ ..................} (2)$$

Take again the equation $F' = I^f_1$. Put zero for $f$, and put either V or P for 1. Thus we have $1_V$ or $I_P$ : either an infinite experience of the veil and of nothing but the veil, or an infinite experience of presentation and of nothing but presentation.

What will be our next order of universe? Suppose we take the universe of fact as it remains eternally and quiescently realized in the World-Consciousness with which we have already slightly cultivated an acquaintance. As explained before, it is an infinite actual swallowing up the possible. This surely is a condition of consciousness which is removed by two stages from pure consciousness: it involves the perception of unity, it also involves the perception of a limitless manifold. It is a universe that knows itself, so far as we can imagine, as a system displaying the infinite richness of its actual presentations. It is not merely the *one* but the *all*. This is the twofold construction put

upon bare consciousness or E. We might accordingly write down for this kind of universe—

*The universe of all actual and no possible*

$U_2$........................(3)

Take again the expression $I^f_I$. Put $i$ for $f$: for the finite aggregate of fact-sections to which, in conception, we attach a boundless realm of possibilities, let us substitute an infinite, actual manifold in which, as we imagine, the realm of possibilities has been completely merged. Thus we have $I^i_I$, which means that we have an infinite universe of infinite richness all displayed : a fact all manifested : an ideal all realized.

What comes next ? What are the dimensions of our own concrete universe at any moment ? Shall we really quit our own homes and lift ourselves in imagination into the majesty of World-Consciousness to live the infinite life ? No : we ourselves live, and cannot ever cease to live, a sort of infinite life. There is of course all the difference between the Quiescent Real of World-consciousnes and the restive concrete of our own experience ; but each is infinite in its own way. Hence,

*My concrete universe at any moment*

$= U_3$............(4)

Evidently in .this case we need not make any change in the expression $I^f_I$. Indeed, this is pre-

cisely the expression that we have been using to denote the infinitude of our own universe at any time as well as its character as a system. Our own universe is necessarily the starting basis of all our ideal constructions : human imagination is inveterately anthropomorphous.

Next, we come to the universe of the monad The monad is a miniature universe—a microcosmos. Such at least is the conception of the monad I need not quarrel with modern Pluralism, and essay to prove in the teeth of its opposition that the monad can really be what we commonly believe it to be. Just now I am concerned merely with the *idea* of the monad. It is a fact which is conceived to be infinitely small as compared with another fact, but is still infinite within itself. If the other fact be macrocosmos, the monad may be called microcosmos. The latter is an infinitesimal as well as an infinite fact. We can conceive the monad only by veiling the infinitude of the macrocosmos and being partial to what is only an infinitesimal portion of it : but the infinite though veiled lives in a way in the monad : the microcosmos is still a cosmos, a universe. We may profitably compare with the *orders* of infinitesimal in Calculus. B is infinitely small as compared with A, but there may be another magnitude, C, which is infinitely small as compared with B; still another magnitude, D, which is infinitely small as compared with C, and so on. These are orders of infinitesimal, and for aught we know, we

may have an infinity of such orders. Hence, every infinitesimal magnitude is also an infinite magnitude in a sense, if of course we shut out the idea of the *absolute* infinitesimal. The relative infinitesimal is only a stage in a process of infinite becoming : placing ourselves at this stage we may possibly have an infinite outlook both ways—in the direction of ever *larger* universes, and in the direction of ever *smaller* worlds. The infinitesimal is only the infinite inverted, taken with a change of direction. Compare for example the infinitude of space with that of the classical monad. Is not each believed to be infinite in its own way or direction ? Let us now deduce an expression for the monad.

Equation : $F' = I^{f^{I}_{I}}$

$= f^{I}_{I}$, putting $I = 0$ of ignorance ;

$= U_4 \ldots\ldots\ldots\ldots (5)$

The interpretation of the above equation will be readily suggested. Let us, to begin with, imagine a boundless universe in which there is an infinitely small portion $f$ : this latter is finite in relation to the universe itself : the monad is finite inasmuch as it is a portion of the macrocosmos. But as the index of $f$ itself indicates, the monad is also conceived as infinite within itself—it is a miniature universe, a microcosmos. The monad is also conceived as a system as the universe is. This is the meaning of the expression on the right-hand

side of the first step. The monad is a fact that lives the infinite within itself and abroad. But, obviously, infinitude in the direction of the macrocosmos must be hidden in a manner to bring out the actual conception of the monad. The larger universe is not indeed effaced, it is only veiled or shaded. An appeal to direct reflection will throw light on the necessity of this operation. Thus, translated into the language of common sense, the expression $f^{I}_{1}$ means this : The monad is an infinitely small *system* of *universe*. The atom long passed muster as an absolute infinitesimal : but have we not already glimpses into the mysteries of intra-atomic constitution ? Has not the ion pushed considerably back the limit of the infinitesimal in the conception of physical science ?

Be that as it may, we find by comparing $I^{f}_{1}$ with $f^{I}_{1}$ that they differ in the *configuration* of the three poles I, *f* and 1. All the three poles are there in the macrocosmos as well as in the microcosmos—which term I have been lately using for the monad. Three poles are really three aspects or directions of thought. Hence when a particular determination passes from one pole to another it really changes its aspect or direction. Briefly, the poles are only the view-points from which, at any moment, we choose to regard a fact of experience. Let us denote a change of pole, aspect or view-point by a change of sign. Thus we have universe

$=+\infty$, monad $=-\infty$. Now, what can an expression like the following mean ?

$$F^{+\infty-\infty}=F^{0}=\text{unity}.$$

This evidently means a Statical Fact. A fact remains the *same* if we conceive it as progressing infinitely in one way and also infinitely in the opposite. If we take a fact-section which we conceive neither as a universe nor as a monad, we merely take it complacently ignoring its infinite aspect altogether. How, for example, do I take commonly a particle or any finite object ? I evince no solicitude in its finite aspect at all. The particle is only a universe regarded in a section, and we may even conceive it as a sort of microcosmos. This is the particle in the aspect of the whole. But this aspect is ignored. Thus—

A monad $=f^{1}_{1}$ .

A particle $=f_{1}$ , putting $1=0$ of ignorance.

The particle is only a small finite fact (or rather fact-section) taken as a unity. We need not discuss the position of the mathematical point. The mathematical point is an absolute infinitesimal or infinitesimal in the limit. This distinguishes it at once from the monad which is a universe within itself. Again, in the conception of the mathematical point the aspect of the infinite is not altogether ignored ; hence its distinction from the particle.

The idea that a fact remains the same if we conceive it as moving infinitely in one way and also

infinitely in the opposite is the type of the idea of equilibrium in Statics : Equilibrium is established when the algebraic sum of the forces acting on a body is equal to zero. A fact essaying to be a larger universe and a smaller at the same time and equally cannot change : it continues to remain what it is.

We may, therefore, speak of the monad as a universe. We have now *five* orders of universe. *Two* more orders may perhaps be added.

In our theory we have imagined our universe or continuum as continuously changing. Experience is an endless stream of becoming. This aspect of movement or change is certainly not prominent in any of the orders of experience which we have considered. $U_0$ is a kind of experience which stands clearly above all antitheses : the antithesis of motion and rest, change and permanence, cannot touch it. Pure consciousness, admitting for one moment the possibility of such a condition of existence, cannot know itself either as changing or as statical : by supposition it is awareness as such without any determination or mode whatever. Indeed, the conception of universe also cannot properly apply to it, if by universe we mean an infinite system. To know itself either as infinite, or as changing or as permanent, it must somehow conceal its alogical aud unspeakable nature, it must put on a sort of veil, as it were. Here is involved a principle of foremost importance in thought. Suppose there is a fact F which is re-

viewed by a fact F′. The latter knows the former and represents it. The former also knows itself no doubt ; but such knowledge is from the very nature of the case intuitive, alogical. No F can know itself logically, that is to say, as the subject or the object of a logical judgment : no fact as we have seen can transcend itself, look at itself from aside. To have a representative conception of F we must bring in another pulse of fact which, again, while knowing and representing F does not know itself *logically*. Hence, in order that F may be conceived logically, it must be veiled ; so long as it is an unrelenting concrete we can have no manner of logical thought about it—we cannot conceive it either as changing, or as permanent, or as infinite. But does not F, even while it is unrelenting and absorbing, *know* itself as changing or as infinite ? Surely logical thought is not the only kind of knowledge available for us : even in full, intuitive absorption we *know*. The fact is alogical, but not unknowable.

Certainly the unrelenting concrete knows itself in a manner in intuition. But it cannot know itself in a manner which necessarily involves or implies logical thought. To be more definite, can the fact know itself *as changing ?* I think not. Changing is essentially a category of logical thought: my continuum of experience is changing and there is no doubt that I feel in some way this change : but to feel the change in some way is not equivalent to feeling an experience *as changing*. The

latter feeling clearly implies a measure of logical thought : here I am to a certain extent *conceiving* or representing the process although I fancy I am merely feeling it : so intimately are logic and life, thought and intuition blended together. An appeal to direct reflection ought to settle this delicate point. As is abundantly clear, I do not mean to suggest that in warm, concrete experience, we do not feel the features that may be there and the processes that may go on there : if we do not feel *these*, what can we feel at all ? But I have ventured to think that there is all the difference between feeling the features as they are given and the processes as they go on and feeling them *in terms* of such categories of thought as 'universe', 'changing', and so on.

This of course does not mean that a concrete fact of experience can involve no thought of universe, or change, or permanence. The point is this : An experience (F) which is being thought or conceived by it (F') has really ceased to be itself, has been veiled, although we may, and do commonly, fancy that we are still living it. This is a miracle of the Veil. If the unrelenting concrete is a realm too sacred to accommodate our profane categories of ordinary thought, it is the region of dumb, unspeakable feeling. Unspeakable wonder, U, is the thought that comes nearest to the native inscrutability of its being. We feel no doubt, but cannot at the moment of feeling think about what we feel : in or-

der that this feat may be possible, *that* feeling must considerably retreat ; and the new feeling which thinks about it does not, and indeed cannot, think about *itself*. When a feeling is warmly there, it is a presentation ; and though this presentation may involve the veil in one sense it does not in another : an actual feeling is something given and as such it is opposed to something being not given or kept back. When this feeling is reviewed in a later feeling, we have two circumstances which render possible such review : the old feeling must subside, for so long as it is what it is, it *is* a presentation and no representative thought : also, the new feeling that takes up for inspection and review the old feeling—this I hasten to admit is only a popular way of putting the thing—must distinctly place its emphasis on the representative thought involved in it in order that we may have a distinct thought of an old feeling being reviewed in a present feeling. The present involves an intuitive basis besides the thought of the past feeling ; now, the emphasis of the present feeling must distinctly lie on this thought-element : without such differential incidence of emphasis the thought of the past feeling, though of course involved in the present, will not render it distinctly and explicitly a thought of the past feeling. Innumerable tributaries of sounds, sights, smells, organic feelings and ideas have poured themselves into the massive experience which we have characterised as our present feeling ; of these countless feed-

ers the representation of the past feeling is just *one*; and how should the present fact declare itself as especially meant for the past fact without emphasising *its* place in the mass and ignoring more or less the rest?

I have already called attention to the distinction between feeling of change and thought of change. The former in its actuality is an utterable condition of consciousness. In its concreteness a stretch of experience is not suspected as a series, a manifold at all: it is simply given: it does not, in itself, involve any idea of change. In order that it may know itself as a process of change two conditions have to be fulfilled. The stretch of experience must first be broken into a series of pulses, so that consciousness may represent itself as passing from the first to the second, from the second to the third, and so on. Without my consciousness being reduced to a series of pulses, I have merely a mass a strech of awareness which does not know itself as a process at all. Of course the passage of consciousness from P to R, for example, in the given stretch of experience is not without its counterpart in feeling: but we can hardly properly call it a feeling of process or change. It is one of the misfortunes of the Science of Fact that none of our ordinary categories of thought such as unity, infinity, change or permanence can go home to the concreteness of the fact: fact is alogical, while all our conceptions *are* logical. Unity or change are categories that are especially meant for thought: in feeling they

are not serviceable. And yet we must think and talk about our feelings. Hence arises the paradox of casting into a logical mould a life that is essentially alogical. The feeling of change is thus an expression of approximate precision : it is looking at feeling through the glasses of logical thought : we cannot help looking at it in this way however. We must lose science if we plunge into the mystery of concrete existence.

In the second place, change appears to me to be a relative conception. Absolute change with nothing permanent to compare notes with, all flow and no steadiness, is a condition which, even if it exists, cannot be represented in our consciousness at all. To know change I must analyse and represent : so long as I do not analyse and represent I know *something* no doubt, but I am lost in that something and cannot think and say what that something may be. Pulling myself up from such absorption I know it of course as a process of change, but in this knowledge my fact has already ceased to live, I have already dissected it and represented it : logic has crept unawares over the alogical. Now, an absolute change which does not stoop to oppose itself to permanence or steadiness, may be *felt* no doubt, but it cannot be known and represented as change at all. Feeling defies all our categories and exceeds all our limitations. Every condition *may* be felt. But every condition cannot be thought of or represented. Pure quiescence or pure activity are conditions that may possibly be

felt, but neither by itself can be thought of or represented by us. Such are the inevitable shortcomings of logical thought. Duality, polarity opposition are the very *sine qua non* of logical thought. Hence Logic cannot stand the absolute Life may. Now, it seems to me impossible to conceive change without bringing in thought all the paraphernalia of logical conception, *viz.*, **P**, **M** and **V**. Change presupposes all these three. We may look askance at the Self-distinguishing Subject of Green which thinks of the change of experience without changing itself: James would serve the ends of philosophy by his pulses of Judging Thought which, while looking before and after inheriting and bequeathing, cannot stay. I need not go into the comparative merits of these two momentous propositions; but I may at once say this that no process of change is ordinarily conceivable by us without our fixing in the universe of experience a relatively permanent point of reference, an origin or pole——although as to the exact place and nature of the origin we may have been quarrelling since the birth of philosophy and may go on quarrelling till the crack of doom.

Indeed there are two extremes that we must keep clear of while we are bringing our logic of concepts to bear upon our life of facts. On the one hand we must not suppose that our concepts such as change, permanence, finite and the like can be made exactly to fit in with our facts: that life is easily amenable to a logical construction

On the other hand we must not say in despair that all our concepts are *equally* wide of the concrete realities, and that therefore science is an absurd business. That a logical concept *is* wide of the concrete reality and therefore cannot be made to represent the latter without violence is a position that we ourselves have taken up: Life is an unspeakable wonder. But logical construction is a business that we cannot altogether put aside: though living always in presentations we require to fancy that we have in a manner represented them or some of their sections. Logic may be discredited, but it is not ordinarily within our choice to dispense with it always. In this necessity of our facts of life representing themselves in conceptions is contained the promise and possibility of science. It is as we have seen the tendency of life to turn round upon itself, of experience to flow back upon itself: experience can indeed never really flow back upon itself, but the tendency is given there in it. It is out of this tendency that the logical concept proceeds. We need not dilate on the birth of the logical concept, but we cannot ignore the circumstance that a logical conception *tends* to apply to the fact, and that therefore no fact can be completely represented in a conception and none can be completely missed in a conception: the applicability of a concept to a fact is thus only a question of degree: we have to choose between a more and a less while we are hauling up a conception before the reality. Conception

presupposes a further operation of the triangular cycle of Presentation, Movement and Veiling: in an idea a fact has been *at once* presented, it has moved and it has been veiled. We need not explain.

Hence we conclude that certain ideas go nearer home to realities than certain others, though none can go *absolutely* home to them. For example in our representation of concrete experience we thought that U, or the idea of being alogical comes nearest to it: the ideas of infinity, continuity and unity also do not appear to go very wide of the mark. But suppose we represent a concrete fact as a synthesis of a number of elements, as a configuration or a series: are we not a little farther removed from the concrete in this manner of conception than while we are merely content to say that the concrete fact is one and continuous? In both case we have sundered ourselves from the fact, but in both also we tend to get back to it; and certainly we come nearer to it in the latter case than in the former. Here there are thus degrees of approximation. Again, while we are representing our fact as a polar triangle (α, β, ι) we have surely wandered farther from the fact as reflection will readily show. The other polar triangle (Subject, Object and Stress between them) does not seem to fare better. Indeed such a polar representation of experience has been one of the toughest fallacies of psychology. Every experience, it has been thought, presupposes a Subject

attending to an Object : but experience presupposes it in logical thought but is altogether innocent of it in intuition. Experience in itself is neither subjective nor objective as we have seen. Hence, if we must admit ideas for the purpose of representing our experiences, we cannot properly admit them on the same kind of ticket : some ideas are more native than some others.

The idea of ceaseless flux comes very near indeed to our concrete life: we have ourselves represented our continuum as a ceaseless flux. But even this idea has no absolute application : no *idea* has absolute application to the Fact. Previously also I have taken care to point out that change is a conception that cannot be applied to the concrete *whole* of any moment : it is the sum of fact-sections that appears to change or move, but the infinite plenum of awareness in which this sum of modes appears can never be thought of as changing or moving. The philosophy of successive pulses of thought of which consciousness is only a function appears to me to be a relic of synthetic psychology which has continued to live as a ghost in the brains of those who have toiled hardest to lay it in the dust : the pulses are only abstract fragments of the living experience which appears in unshackled reflection as a boundless sea of awareness in which infinite modes are rising and tossing ; as a spiritual landscape which no horizon, however wide, can bring to a close ; as a song which while shading off into ever softer and softer echoes never absolutely dies

away into stillness. No language can depict a phenomenon so colossal, so all-absorbing as life, but certainly it may be said that life is not a *mere* series of pulses, and that consciousness is only the small, mysterious glow which attends the appearance of these pulses. *Where* do the pulses successively appear? Surely James' present pulse of Thought puts into a nut-shell my entire universe at the present moment: the present Thought includes all——the past, the present and the future meet in it: I may believe that the present pulse is not all, but as I have shown before this belief is inside and not outside the present pulse and therefore cannot really prove an existence wider than the present pulse. All this is true; but I do not see why we must regard our present universe of experience as *a pulse* at all: to regard it so does not seem to me to be *radical* empiricism. The present fact——I may speak of it as present as distinguished from a past and a future only through indulgence——is nothing short of the universe as it lives in my consciousness; and as I can set no bounds to my universe of fact I can set no bounds either to my consciousness which lights it up if consciousness is a function it is an infinite function, let it at all events rise superior to the paltry pulses which have violently thrown experience into the mould of a series. Existence indeed cannot be thurst into any mould of logic whatever: this is perhaps the meaning of the famous dictum of Kant that the forms and categories of Thought are a

empirical——having no proper transcendental application. Change and permanence may knock at the gate of Reality and may be sure of never finding the knock answered: Heraclitus and Perminides are destined to live over and over again in history. But as I have suggested the question of the applicability of our ideas to our facts is at bottom a question of approximation, and therefore one of degree. We shall see, in coming to deal with the nature of consciousness and with the allied problem of existence, whether change *or* permanence comes *nearer* to reality: whether the hoary Upanishads are wiser in placing the essence of reality in Quiescence than the modern Bergson who seeks it in an 'endless stream of becoming'.

One thing, however, has been clear. If we must hesitate to force the notion of change or permanence on our own concrete universe ($U_s$), should we hesitate in thinking of $U_0$ or the hypothetical universe of pure consciousness? Can we say either that *pure* consciousness changes or that it is quiescent? Quiescence and permanence are terms that I shall distinguish for an important purpose later: I am here using them indifferently. The difficulties about the unverse of pure consciousness are great, but let us waive them. Now, can we hesitate in answering the point that has been just raised? My ordinary facts can stand logic to a certain amount: change or permanence are not quite absurd conceptions as applied to these facts, though as we have seen they are not quite correct

conceptions either. But nothing can overcome the awe of our notions when they are face to face with pure existence. That substance is either pure rest or pure change is a proposition that has been often made : but 'pure' as attached to notions that are essentially relative and polar is a contradiction in terms. We may have doubts as to whether 'pure being is pure nothing', whether pure consciousness is *no* consciousness : but there is no doubt as to what pure change and pure rest are : they are either utterly inconceivable conditions or pure contradictions in terms.

We conclude therefore that $U_0$ is a condition about which nothing in particular can be predicated indeed this was to be expected from its very definition as pure consciousness. The theory of Fact that we have outlined in the preceding sections cannot obviously touch it ; it is above all theory. The triangular cycle **PMV** is simply our latest statement of the theory ; therefore this cycle cannot be predicated of $U_0$. We cannot say that consciousness as such is presented ; that it moves ; and that it is veiled. Let us imagine these operations as applied to awareness as such, and the utter absurdity of the situation will be palpable. A discussion over this point will allure us just now into the mystery of $U_0$ ; nevertheless the point is clear to direct reflection. Predication is possible only in relation to determinations or modes *in* consciousness. Negative predication about $U_0$ may be allowable however : we may scare away the notions

that are improper to it. Thus pure consciousness is a condition of *no* PMV. If the index be made to represent the operation presupposed in a given experience, we have the following obvious relation .

$$U_0 = E^0.$$

It is an experience of nothing in particular. This must not be confounded with *no* experience. The former is commonly taken to be the latter because life is pragmatic and would not care to notice where it is not its interest to notice. We are ordinarily interested in particular *modes* of awareness ; awareness as such is too subtle and metaphysical for us ; hence *this* we do not care to notice where there are no modes of our own preference to notice—it is void and blank for us. Even in the infinite richness of my universe at any moment I acknowledge and care for only a few features : I hug my littleness in an unbounded possession. Now, if the features do not all interest me, what interest can I evince in the unbounded plenum of awareness in which these features may appear ? It has indeed a supreme metaphysical grandeur, but this is not precisely the stuff on which life can ordinarily feed itself. To life which is little else than a system of partialities, pure experience in which there is nothing to choose and shun, love and hate, is practically no experience. But what is it *really* ?

The vague, massive consciousness in which we are apparently lost while we are just going to be asleep or just going to be awake has been denoted

by the two symbols $E^V$ and $E^P$. As in the development of the embryo phylogeny is recapitulated —to adopt the formula of Heckel—as, that is to say, the embryo has to begin at the beginning and pass through the stages which the species have had to reckon with in its entire line of evolution—almost so, I might say, experience has to begin at the beginning even at certain regular periods of our normal life. Perhaps this is not a quite grotesque analogy. Spencer's life must have been thrown away if the close correspondence between the development of the organism and that of experience were not proved ; and as organic structure and life have to start from massses of homogeneous, structureless protoplasm, so experience has to begin from a condition of vague, homogeneous sensibility : in both cases the progress has been through increasingly greater differentiation and co-ordination. Now, this condition of vague, homogeneous sensibility at and from which experience commences is rehearsed at certain regular periods of our *own* normal life : the past is not irrevocably lost to the embryo ; it has to live it in a certain sense : neither is the past irrevocably lost to ourselves ; we too have to live it in a certain sense. Vague, homogeneous consciousness does regularly recur in our life of experience : our life is not uniformly always a specialised work. As to the nature of the primordial sensibility—the mother-stuff from which our own specialised experiences have developed—we may well

quarrel ; it may be doubtful also as to whether our $E^P$ and $E^V$ are exact rehearsals of the primordial sensibility connected with that momentous speck of protoplasm which has grown through ages into the human brain that has divided Wallace from Darwin and into the brain of the ant which according to the latter's verdict is the most wonderful molecule in creation !

We have previously described $E^V$ as an experience of the veil and of nothing but the veil. In the face of this assertion how shall we save our doctrine that P, M and V are necessarily interdependent ? $E^V$ means that V only has been *presented* and that nothing else has been : it is a case of the presentation of the veil. And inasmuch as the veil is being presented, the idea of movement is necessarily presupposed. Thus can the doctrine of interdependence be saved. There are, however, involved two points here which deserve our special notice. In the first place, we have already cried ourselves hoarse over the distinction between intuition and representation ; what is impossible in the former becomes possible in the latter, and *vice versa* : there can be, for example, no logical thought of an object without necessarily involving a thought of the subject : but intuition is monovalent as we have seen : intuition can attend to only one of the poles at a time—while we think we are directly perceiving a subject regarding an object our thought is really

oscillating between the two. The distinction between intuition and thought is vital. Hence the expression $E^V$ may mean this : We have no intuition but that of the veil itself. Possibly there can be no *thought* of V without necessarily bringing in the ideas of M and P : the full conception of V is perhaps the conception of the whole cycle PMV. But what is a necessity in conception need not be a necessity also in intuition : so that the veil alone may be given in an experience, though of course the veil alone cannot be conceived in thought.

In the second place, the terms 'nothing' and 'no' have generally to be taken in a relative rather than in an absolute sense in our science. While we say that we have an experience of *nothing* but the veil, we may commonly mean not that we have absolutely no experience of P and M, but that the experience of P and M has sunk down to an impalpable *minimum*. Thus P and M can be tolerated even in the feeling of the pure veil : the former two are also felt but the feeling is only an irreducible minimum and is nearly eclipsed by the side of the dominating, all-absorbing veil. The veil not only affects the particular presentations of the continuum, it veils its own nature also. Really V is only an aspect, a pole, of the cycle PMV : this is its whole, concrete nature. But how easily does the veil appear to conceal its own nature !

Thus in $E^V$ I may not at all suspect either P or

M, though as we have seen these latter may be present along with the former (V) in feeling as an almost impalpable background, and though also no articulate thought of the former may be possible for us without bringing in the ideas of the latter. The self-concealment of the veil is a point to which I desire to call particular attention. A full discussion over this point has, however, to be suspended. If the veil is anxious, fatally disposed, to conceal itself, what renders the presentation of the veil in experience possible ? How do I at all feel the darkness that has enshrouded all ? The question will turn up again.

The remarks which we have been driven to make with regard to $E^V$ will also apply to $E^P$. The purity of P in this latter notation may not be absolute. Have we only presentation *in general* and no presentation in particular ? Do I merely feel the circumstance of being given, without yet feeling what in particular is being given ? It is easy to perceive that the *feeling* of 'being given' involves perhaps an irreducible minimum or the feeling of 'moving' and 'being veiled', so that the feeling of P in $E^P$ is not absolutely pure. Again, as in the previous case, the thought of P or 'being given' in $E^P$ will seem to involve the ideas of M and V.

But I will not linger here over these details. The analogy of $E^P$ and $E^V$ will suggest another, *viz.* $E^M$. This last is an experience of preponder-

ant movement—I need not say pure. The feeling and the thought of M may involve the feeling and ideas of P and V : its appropriation of consciousness need not be absolute. In normal waking life I come very near to this experience of utter change or movement sometimes. There are moments in my life when all special interests have become flat and consequently all special presentations have sunk down to an almost impalpable minimum I cannot say that this is an experience of *no* particular presentations, but certainly it is an experience of *minimum* presentations, of sounds, sights, touches, ideas and emotions very nearly ignored. Now. I feel that such stretches of experience do sometimes occur in my normal life. I feel that I can also abandon myself to such stretches of monotonous experience by effort, by way of experiment It is an experience of monotonous dash or *flow* of life, with no spécial interests and presentations relieving the monotony. Such a condition should, however, be distinguished from bare consciouness or $U_0$. *That* was no experience of flow or movement : that was an inscrutable, unutterable condition of existence upon which no category, whether of motion or of rest, could be fastened, *This* on the other hand is an experience of something, *viz.*, flow. It is the perception of the stream of consciousness gliding noiselessly on : but no perceptions of the eddies and ripples which previously engaged our thought so long. This sort of mysterious unrest does possess me at times, when I

can pause on nothing in particular, enjoy nothing in particular and strive after nothing in particular. Analytically, such an experience may be found to involve both presentation and veil : it is easy enough to show that the experience of the type described above does. Let us call this type $E^M$.

Exclusive stress on the indices of the three types $E^P$, $E^M$ and $E^V$ has been responsible for three main divisions of speculative thought about the nature of reality. The first has been at the bottom of that theory of reality which I may call Quiescent Idealism. The reality is conscious existence and its essence must be laid in permanence rather than in change. It is *not* a ceaseless flux. Change is abnormal and not normal in reality. What we have called the Quiescent Real is an unalterable order, eternally realized : it is all actual and no possible. The emphasis of presentation will naturally put such a construction upon reality. Presentation is inseparable from consciousness, and in itself it certainly implies something that endures. To feel that A has been presented is undoubtedly to feel that it has been given in consciousness, and to be given, apart from the ideas of movement and veiling, is the idea of pause, endurance : A is the feature of my continuum upon which I have rested——rested *for a while* if I bring in the supplementary idea of movement. Thus essentially presentation implies both consciousness and permanence. I may

take my present universe of experience to illustrate this view. A universe has been presented in consciousness, and if I do not choose to read M and V along with P into this universe, it is something that remains or endures. Mere presentatation thus appears to be connected with endurance.

The second type, $E^{M}$, has been at the bottom of that theory of reality which I may call 'ceaseless flux' or 'endless stream of becoming.' We grope for the foundations of reality not in endurance but in change: change is the normal condition, the essence and index of reality. Here evidently our emphasis has been laid on the aspect of movement in experience. Concrete existence for us is $E^{PMV}$ or experience involving all the three aspects of presentation, movement and veiling: this is the whole for us. But we ignore the whole and accentuate a part or aspect in conceiving of the nature of reality. The 'ceaseless flux' owes its origin simply to this veiling operation.

The third type, $E^{V}$, which accentuates the aspect of veil or ignorance in the cycle PMV, has been at the bottom of the theories of Agnosticism, Nihilism, and also, as I believe, of Materialism. The veil disguises the nature of truth——it is the principle in us that induces us to ignore and disavow. In my boundless universe of the present moment I fancy that I have and know only a burning candle before me: I indeed have and know many more things, but with regard to

these I think and behave as though they have not come in my way at all. It is thus the magic wand of the veil which makes the infinite assume dwarfish proportions, and an abstract segment of fact pass unchallenged for the fact itself. I actually live the concrete whole at every moment of my being, and I can never cease to be the concrete whole at any moment: but how easily I ignore this, and deal out my existence in cut-and-dried fragments! It is therefore under the influence of the Veil that I pretend that I do not know the reality: indeed! I *live* the reality in experience. I take it as unknowable while it is perhaps only unrepresentable or ununderstandable: and surely the difference between knowing and representing or conceiving is real. Knowing has too long and too readily been identified with logical thought, with the dialectic process; but the essence and the basis of knowing are in intuition. Now, with this definition of knowing in mind, we cannot say that concrete reality is wholly beyond our reach——is unknowable. It is not only not beyond our reach, but we ever actually live it and can never actually cease to live it: experience and reality can never be divorced from each other. Here I can only very meagrely indicate the connection of agnosticism with the veil. While my whole being has been bathed in a flood of genial sunshine and every atom of my existence is feeling the freshness of morning, I complacently close my eyes and bury myself into the night and darkness of my own making.

Nihilism also appears to me to involve the veil. Nihilism is the view that proposes absolute nothingness as the ground and the destiny of all things: all things proceed from nothing and return to it. Now, what can be the psychological basis of such a view? If we regard experience and fact in the light in which they have been regarded in this essay, then surely fact can, in no conceivable condition, be reduced to absolute void. If experience were to consist of a series of pulses of thought to which consciousness might be attached as a sort of glow or phosphorescence, then of course the series could be conceived to come to a close and the attendant glow of awareness to be completely put out. But as we have seen it is an abstraction to regard experience as a series whether infinite or finite. Even to conceive it as a sort of universal process is an abstraction: by 'universal process' I mean an unbounded, all-embracing continuum in a condition of endless becoming. Now, as I have repeatedly suggested, this universal process is a stress or agitation *in* awareness; so that even if we could conceive a limit to the process, we could not conceive a limit to the infinite plenum of awareness itself. *That* at any rate must endure even where the series and the process have been altogether thought away. Consciousness of is-ness or existence is the irreducible element of our experience. What we commonly call an experience of nothing is an experience of something: in normal life we have no

experiences of pure nothingness: experience is normally always an experience of something, with a certain form and determination. We may sometimes take a particular something of experience as equivalent to nothing because we are pragmatic and because we ignore. But waiving this point let us take an experience of pure nothing. Is this not an experience of pure being or existence? Between the experience of something and that of nothing there is an ultimate point of contact. The difference between a something and a nothing is not a difference between *is* and *is not*, between pure being and pure non-being. It is really a difference between *something is* and *nothing is*, into which both *is* enters as common and irreducible element. This *esse*, being or existence as such is the ultimate point of contact, the last common platform of disagreeing and clashing facts, and this point and this platform become unmistakably clear when all other possible points of contact have failed and all other possible platforms of collocation have broken down. Hence consciousness of existence must endure when nothing else can be supposed to remain. The conception of an absolute beginning of the series of experience out of void and that of an absolute end of the series in void is a conception which, like every other conception, belongs to the index of a fact: the whole concrete fact, therefore, is not bound to dance to the tune of the index. I may apply all manner of conceptions to my concrete fact which I live: but

what I actually live may not really yield itself to the mould of any of these conceptions. Some of these conceptions come nearer of course to the reality of life than others, but none as we have taken pains to point out can absolutely stand for it. All theories are approximations, but some are closer than some others. Now, as I have ventured to think, the theory of an absolute void is not even a theory of tolerably close approximation. It involves, as has been suggested in the above hasty examination of the view, a *threefold* application of the veil. First, we ignore the concrete, alogical nature of experience or fact, and conceive it as a flow or process. Secondly, we ignore the unbounded plenum of awareness in which the fact lives. Thirdly, we ignore the element of being or existence which attends, and cannot be supposed to be absent from, our so-called experience of nothing.

The theory of materialism is also clearly a view that arises from V-emphasis in our contemplation of the concrete fact. Our concrete at any moment involves only a minimum veil, as we have seen : it is a universe given in consciousness. The pragmatic fact presupposes a greater veil than the whole in which it lives ; a section or aspect of the pragmatic fact will naturally presuppose a still greater veil. Now, what passes for matter and motion is only a fact-section and not the concrete fact. Matter is experience accepted only in a segment and ignored as a whole : so also is motion. We

need not unnecessarily dilate on a point which can be settled at once by an appeal to reflection. Thus not only matter and motion but Space and Time which they presuppose are abstract fact-sections, and therefore creatures of the veil. Now, what is a fact-section cannot be really equated to the whole concrete fact : matter and motion cannot properly be regarded as the fact itself : neither can Space and Time be regarded as the concrete fact itself. The fact is not only wider than the fact-section, but the latter necessarily presupposes the former, can never be imagined or supposed to live independently of it. Hence, matter and motion are only special forms of experience : we cannot therefore think of explaining experience itself by its special forms—matter and motion. The configurations and displacements of the molecules of the brain may present beautiful parallels to the phenomena of mental life : but what are these configurations and displacements really ? Are they not already segments of experience ? When I have before my eyes or imagination a particular configuration of the brain molecules, the entire concrete fact for that moment is not certainly the so-called physical configuration merely ; I have of course that physical configuration, but also much besides ; and my experience of the moment may involve a more or less articulated belief that the configuration is physical and objective. But the belief cannot make an experience to cease to be an experience : the configuration that I see or imagine

is still a pragmatic section of experience, whatever my belief concerning it may be. There is no miracle by which we can transcend our own given universe of fact : and if experience is simply the name that we give to this universe of fact, no miracle can really make it possible for us to bring experience to bear upon something which is independent of experience. Here lies the incurable weakness of materialism. The veil is prominent in the rise of such a theory of fact.

By way of summing up we may lay down the following symbolical expressions to indicate in a precise manner the positions of these classical theories of Reality. We have the misfortune to fly repeatedly in the face of the dictum of Bergson that metaphysics is the attempt to do without symbols : it has been one of the special features of this essay to put facts of experience and their relations into symbolical moulds ; but I have repeatedly urged that facts in the concreteness of their existence are inaccessible not only to symbols, formulæ and equations, but to all manner of conception. If according to the verdict of James metaphysics is an obstinate offort at clear thinking, I venture to think that symbolical expressions and equations *do* sometimes magnificently serve the ends of clear *thought.* If however metaphysics is the host of intuition and nothing short of intuition, then can we hesitate to answer the memorable question of Kant—'Is metaphysics possible ?' Metaphysics in this sense ceases to be a science, and becomes equivalent to Life.

Be that as it may, let us recall the triangular cycle in experience—

$$E^{P}_{M}V\ldots\ldots\ldots(1)$$

Let us also characterise P as the principle of quiescence and presentation ; M as the principle of activity and change ; and V as the principle of ignorance and inertia. The grounds of such characterisation I will discuss hereafter. Now, let put equal to zero or ignore the entire cycle PMV. What does that mean ? It means that experience is taken concretely or alogically, without our *representing* it as a phenomenon involving the interdependent operations of presentation, movement and veiling. It is the acceptance of the concrete fact as such. Hence, we have

concrete Fact = F = E, putting
o of ignorance for PMV......(2)

In the order of evolution the alogical fact (2) has priority to the logical fact (1). Nevertheless, for obvious reasons, we have taken the latter as our starting basis in our present investigation.

In the next place, let us put o of ignorance for M,V in the cycle. This, as we have seen, will not mean the absolute elimination of the thought of movement and veiling, but rather the reduction of this thought to a bare minimum. Thus, performing the necessary operation, we have

$E^{P}$ = the view of Reality as Quiescent
Experience......(3)

This is how the theory of Quiescent Idealism is

born : the real is essentially Experience, and it is unchanging, statical. The veil is conspicuous even in such an enlightened view of Reality as this.

In the next place, let us ignore not only the cycle PMV, but if possible even E which supports all our logical constructions. Previously we have seen that E can never *actually* be put equal to zero ; but nevertheless we may fancy that a condition may possibly exist in which there is no E This is a mere fancy however ; we can neither feel nor represent the condition of no experience even if one should exist. This we have—

The base and cycle in (1) all veiled or ignored
= the view of Reality as unknowable
= Agnosticism......(4)

Let us next put zero for P, V in the cycle. This will of course mean the ignorance of the aspects of presentation and veiling in a representative thought of Fact. I look at the aspect of movement only, and do not care to unfold in thought the necessary implication of this aspect. Thus we have

$E^M$ = the view of Reality as
Universal Process or Change......(5)

Two other varieties of conception we have already noticed *viz.*, Nihilism and Materialism. We now proceed to distinguish between them. In both cases, it is clear, the inalienable basis of Fact—E or experience—has been veiled : we do not think that Reality is essentially a condition of experience. But while the former reduces it to a condition of nothingness, the latter reduces it to a condition of

matter and motion. Now, I venture to point out that the thought of utter nothingness is a thought of quiescent presentation with the essentially conscious nature of presentation being concealed. In thinking of nothingness or void I naturally represent to myself empty Space or empty Time, preferably the former. Empty Space is for me the symbol of utter nothingness. Now, empty Space is essentially an experience of statical presentation : the thought of quiescence forms an element of the conception of void. Movement seems to be bound up with life and concreteness, rest seems to be bound up with death, exhaustion, emptiness. For the representation of utter void, empty Space is, as I have suggested, preferable to empty Time. Thus in Nihilism we may say that the basis of the fact is ignored, and of the triangular cycle PMV, the first is accentuated. Thus we have

$E^{P}$ (veiled) = the view of Reality as utter Nothingness—Nihilism......(6)

We shall have two expressions for Materialism if we regard matter and motion as separate. Matter preponderantly implies ignorance and inertia : it is taken as something alien and unknown : its essence is also placed in inertia. Motion preponderantly implies movement and change. Hence in materialism of the common type we have the basis of fact ignored, and the aspects of M,V emphasised. Thus

$E^{MV}$(veiled) = the view of Reality as Matter *and* Motion.
= Materialism ··· (7)

But the conception has undergone a vast change in these days. We have already referred to the vortex theory of matter more than once. Generally, there has been a tendency to reduce matter to motion. Of course it remains difficult to conceive pure motion, or motion without substance to move. What is it that is supposed to move in a vortex ? Shall we say ether ? If so, how is ether related to ordinary matter, and how is it related to motion ? It is difficult to reduce the duality of matter and motion to *either* of them. But we are prapared to admit that in the latest conceptions of matter itself the aspect of motion has been greatly emphasised and the aspect of dead stupor has been largely ignored. Hence for this latest type of materialism we have

$E^{M}$ (veiled) = the view of reality as physical motion.

= Another type of Materialism......(8)

I have now considered in a summary way some of the leading forms of speculative thought about the nature of Reality or Fact. All these theories have been shown to involve the operation of veiling and accentuation. In some of the types the basis of Fact, E, has been suffered to remain undimmed ; such an unflinching acceptance of the inalienable basis of Fact has led to the growth of idealistic theories concerning the universe : they are an attempt to keep exposed the foundations of the fact of life, without allowing clouds and mist to gather too heavily round them. It constitutes

a vantage ground of these theories from which they are not likely to be easily dislodged. Agnosticism or the theory of the inscrutable reality has endeavoured to conceal the base as well as the superstructure of Fact : Reality is all unknowable —nothing can be predicated of it. But this assertion and claim of the agnostics cannot be taken seriously. Even in pronouncing unknowable I *do* predicate something of the reality, *viz.*, that it *exists* at any rate. This indeed is the common point of contact between Kant and Spencer, Hamilton and Huxley. Predication advances even a step further : surely to know reality as unknowable is to know it in some fashion and even definitely. Kant's 'Thing-in-itself' has even been made to figure as cause or condition ; surely this is knowing it somewhat definitely. Thus, whatever we may fancy, the basis of Fact cannot be completely ignored : E can never actually be put equal to zero. Nihilism and Materialism have also essayed to undermine the foundations of Fact in thought and accentuate one or another aspect of the cycle PMV. In both we really build upon ignorance : we set to ourselves the task of rearing up a superstructure of thought where no basis has been provided. Buddhistic Nihilism tries to conjure up a world out of a condition in which nothing is : it is also a world that hinges upon nothing and a world that melts away into nothing. This surely is an effort to conceive where, from the very nature of the case, no conception is possible. In

clear reflection, experience—the basis of Fact—cannot be thought away in any manner of existence ; and if the test of 'the inconceivability of the opposite' counts for anything we cannot hesitate to accord to out and out nihilism the sort of reception that it deserves. The two propositions that we do not and cannot know reality at all and that the reality is utter void, are not precisely the same assertion as will appear from the expressions that we have respectively put down for nihilism and agnosticism. If the latter can be pretended to be a case of all ignorance, the former cannot evidently be. Surely we do positively know something of the nature of reality in the former : it is absolute blank. In the latter also we do know something about the so-called unknowable, but this circumstance we manage somehow to conceal from ourselves ; we pretend that we do *not* know anything. Accepting for one moment our pretensions, we have also ventured to characterise the knowledge of reality that we seem to possess in nihilism. It is as we have seen a knowledge in which the aspect of quiescent presentation has been accentuated. Between pure being and pure nothing, pure consciousness and no consciousness, there hangs a thin, mysterious veil. In the latter we have veiled or ignored a small but all-pervasive term 'is' : pure nothing, to our thought, is the consciousness that nothing *is* or *exists* : we cannot push nothingness beyond this point. Now, the consciousness of is-ness or existence may be ignor-

ed, and thus a conception which is really that of the consciousness of nothing existing becomes a conception of pure nothing. Materialism also, as we have seen, has essayed to build upon ignorance. In the first place, the basis of Fact in experience is hidden ; in the second place, there is also involved in materialism a differential incidence of emphasis as regards PMV : all these aspects are not impartially recognised in materialism.

Though the consequences of the veiling operation are philosophically momentous I need not have dwelt so long upon these mere side issues. We were attempting a classification of our universes of experience. I already gave five orders of universe, and promised to add two more. To the consideration of these two orders I now proceed.

I have already pictured to myself a universe of ceaseless flux. It is clearly a universe of M-emphasis. Flux cannot of course be represented in thought without bringing in the ideas of presentation and veiling ; but there is nothing to prevent my emphasis from being laid on the aspect of movement. My world is to me a Universal Process. In normal experiences, we have seen, we come very near to the condition of knowing a universal flux : the self is listless and life is restlessly fleeting. I cannot say that this is a condition in which there is no feeling or representation of the aspects P, V, but certainly it is one in which the feeling or thought of the latter has been reduced to an almost inappreciable minimum. Let us

admit therefore an order of Universe in which the aspect of movement or flux is preponderant. Thus,

*My universe as continuously changing—*

$$U_b \ldots\ldots\ldots\ldots\ldots\ldots (6)$$

There is also another mode in which the universe may appear in me. Suppose I believe there is a universe of fact in which the real and the ideal have become identical with each other—a realized statical fact of all actual and no possible. To such a universe I have already applied the name Quiescent Real or Q. R. Evidently, I am not solicitous about the possibility and truth of such a universe, it is enough if we *conceive* sometimes that our universe is only an echo and suggestion of a finished and consummated scheme; that our life is an anxious striving after a life all complete and settled; that our knowledge is a dim presentiment of a Light which no shadows can limit. Such a conception has been an inspiration to some of the noblest systems of ethics and metaphysics. We may admit such a conception therefore as a relatively common one without yet voting for either Plato, or Green, or an wing of the Hegelians. Now, in what light do we regard our own normal universe by the side of the Quiescent Real? Naturally, our own universe would appear as a partial reproduction of the Q. R. Our knowledge would be a partial reproduction of infinite wisdom; our moral life would be a partial reproduction of moral perfection; our truth would be

only a partial aspect, an earnest, of ultimate truth. What is the significance of this partial reproduction? It is precisely the Veil. The infinite all is hidden from us ; a part, a preparation, is our lot. Thus my universe at any moment can be taken as the Quiescent Real partially hidden—the infinite Wonder but partially manifested—the infinite Problem but partially solved—the infinite Puzzle but partially explained. Hence I may put down :

*My universe as the Q. R. partially hidden or manifested*= $U_a$............(7)

We have now as many as seven orders of universe. Before closing the consideration of the orders I should like to point out that $U_a$ and $U_b$ negotiate between $U_2$ and $U_3$—between the universe of Quiescent Real and our own concrete universe at any moment. My universe is not only the Q. R. partially hidden and manifested, but I also take it as a provisional result attained in an endless stream of becoming or reproduction : the All is being reproduced in me not only *partially* but *gradually*. Hence my universe may be conceived as arising from the Q. R. by the twofold operation of veiling and movement : the Q. R. must move and be veiled in order that I may have my universe as I take it—*viz.* as the partial and gradual reproduction of the All. The place of $U_a$ and $U_b$ is thus clear. In fact, wherever we conceive a thing or a process as a striving after an

End or Ideal, we necessarily have to deal in V and M. A growing seed or embryo will serve as a typical case.

What renders the transition from $U_0$ to $U_1$ possible? How can pure consciousness become a consciousnes *of* presentation? For this it is necessary, in the first place, that consciousness should cease to know itself as *pure* consciousness: it must veil itself somehow. Such veiling will not of course mean the putting out of consciousness altogether which is impossible, but its ceasing to be what it was. It was, by supposition, pure consciousness now it has become consciousness of some state or determination: it has passed on from one condition to another. Now, whenever a certain condition A has moved on to another B, we may suppose that the former has been veiled; for, so long as A is unflinchingly given, continues to remain absolutely what it is, nothing else can appear in its place. Hence consciousness must cease to be *pure* consciousness in order that we may have a consciousness *of* something or condition. Thus change or passage from one condition to another necessarily implies the veil. Does it not also imply movement? Indeed, any process or change necessarily implies the cycle PMV: in order that A may change into B, it is of course necessary that A *gives way*, and B is *gradually presented* This being so, we see readily enough that while $U_0$ is an experience of no PMV, $U_1$ *is* an experience of PMV By our hypothesis, there is absolutely no vestige of

he triad in pure consciousness ; and it requires ardly any pretence of analysis to bring out the riad in the order of universe which comes nearest it. This latter is *no* pure awareness : it is reness *becoming* an awareness of presentation. though the complete cycle is presupposed in operation, it is manifest that the result is an perience of ***presentation***, accentuating P rather n M and V. The aspects of movement and ling, though inseparable from the aspect of sentation, may be veiled themselves and bring t in stronger relief the latter aspect. In the ordiry flow of mental life, it is sometimes the cirmstance of flow itself and sometimes the relaely stable and substantive parts in the flow that y come into prominence : now I am more interd in the processes, a moment after I may be e interested in the things. This illustrates the tuating emphasis of mental life so far as the ects P,M,V are concerned. It is emphasis that gles out objects or features for pragmatic selecn. Hence the **emphasised** fact-section passes the fact ; a case of P-emphasis is accepted as a e of pure presentation. If for one moment we sent the phenomenon of deduction of one unifrom another by ratio, we have obviously the wing relation—

$$U_0 : U_1 = \mathbf{PMV},$$

e emphasis has been represented by bold type. Ve may also enquire in passing as to what the sition from $U_1$ to $U_2$ requires and implies.

By definition, the former is a universe of simple homogeneous presentation ; the latter is a univers of infinitely various presentations. The form is an undifferentiated continuum—featureles monotonous ; the latter is a differentiated cont nuum—infinitely rich in features, yet quiescen The former is like a shoreless sea unruffled an in repose : the latter is like an ocean bearing o its bosom an infinity of waves and eddies, b arrested and stupefied in a calm enchantme The derivation of the latter from the form implies therefore all that is presupposed in t differentiation of a featureless, montonous con nuum into an infinite manifold, calm and u changing. It is the birth of the many from t one, of the complex from the simple. It is fundamental problem of creative evolution. are here of course endeavouring to conceive h the Q R. may be deduced from $U_1$ or the unive of simple presentation : we are not concerned w the cosmological question as to whether Q. R. *really* deduced from $U_1$, or is an ultimate ord universe itself to which question of deduc would not apply. Cosmologically, the former be either an ultimate, eternally realized univ which is being gradually and partially reprodu in the universes of our own ordinary experien or it may be a far-off divine event—an End not consummated—an Ideal not yet realized—to wh the world is steadily moving ; or, lastly, it ma a universe *derived* from a simpler form of unive

or example, $U_1$ may be actually derived from $U_0$, $U_2$ from $U_1$, $U_3$ from $U_2$, through the mediation f $U_a$ and $U_b$ : this may represent the *actual* order f creative evolution. I am, on the other hand, erely tracing the 'genealogy of the concepts' with-ut suggesting in any way that the dialectic process f concepts is *equivalent* to the actual order of the volution of the universe. I am merely endeavour-g to show how, taking $U_0$ as our starting basis, e may proceed gradually to our own universe of xperience through intermediate forms : clearly e starting basis as well as the order in which the niverses have been arranged in our scheme are ypothetical : *assuming these*, what is implied in e successive derivation ?

Now, what renders the passage from one to nany possible in thought ? I cannot possibly ass from $U_1$ to $U_2$ without in the first place eiling the former : every act of passage or transi-ion implies the veil as we have seen. We need ot go deeply into the psychology of the concepts f one and many ; but at bottom, it must be con-ssed, the antithesis is a fundamental one and nnot be reduced to a simpler relation. Never-eless to have the many in the place of the one must not only cease to have the pure one, but mething else of a fundamentally different xture must be *presented* ; and the presentation this something else presupposes of course vement. Hence, clearly, the transition from the rception of one to that of many is rendered

possible by the cycle PMV. This is superfici psychology, but need not be trivial and contemptibl on that account. We may try to make our accour of the process a little more definite by pointin out the aspect of the triad which is especially em phasised in the transaction. It is, as before, tl aspect of P that seems to be prominent in tl operation. The Q. R. is after all a universe infinitely rich presentation: undoubtedly some thing must have been ignored in order that might at all *appear* in consciousness, and t appearance, whether gradual or sudden, wou necessarily imply movement; but of these co nected aspects of the operation it is the first th unquestionably predominates. But consider al the tone of the aspect of movement. Is this n also fairly prominent? Conceive a given univer of experience first, and then conceive it as deduc from another order of universe: suppose that tl vague, massive and almost homogeneous experien of the amœba has differentiated itself into a fair articulated system of experience like that of tl adult man: what are the prerequisites of t transition for thought? Is not the idea of mov ment a prominent element of the idea of t development? Suppose also that the develo ment of the latter is sudden and not gradual; a sudden convulsion the amœba's mind is co verted into man's; is not the idea of moveme prominent in this wild conception? We do n know whether the Quiescent Real is an eterna

realized universe or a universe ever in the making ; it is clearly quiescent in the former sense, but how can we regard an order as quiescent which is perpetually on the anvil of creation ? In the latter sense, the Real is an Ideal which is being ever realized in infinite experience—the vaguely conceived goal to which the finite life is aspiring and moving. It is therefore a condition in which the aspiration is expected to be satisfied, all struggle and striving are expected to be quieted : it is the fulfilment of the Ought to be, the satisfaction of hope and endeavour. Do I commonly not take my life as a preparation for a last fulfilment and my world as an approach to a final perfection ? Whatever the grounds of the belief may be, the belief has been persistently there in many of us. Now, is not the devoutly wished for consummation of my life's ends and possibilities, 'the far off divine event' to which the whole creation is believed as moving, a condition of quiescence and satisfaction ? I have assuredly a foretaste in imagination of the last repose which comes and perpetually lasts after life's long and weary journey, the earnest and anxious struggle, has completed itself. Briefly, I may indicate *three* conditions in which the Q. R. may be conceived by us. First, it is the eternally realized order which is being gradually and partially reproduced in finite intelligence ; secondly, it is the far-off ideal to which the world, or at any rate, the life is steadily moving and which it imagines as a condition of infinite satis-

faction and peace, the ideal, however, *not* being conceived as already actually realized in any experience ; thirdly, it is an ideal, nowhere actually realized, which is a condition *infinitely* distant from ours, and to which therefore our life, or the life of the world for the matter of that, is an asymptotic approximation : the cherished ideal is essentially a state of quiescent satisfaction, but it is destined to remain ever beyond our reach : the actual and the ideal may ever come closer together, but they can never meet. Human imagination has painted the quiescent real in all these three characters. We may note that Q. R. of the first kind is an order which especially emphasises the aspect of P ; the latter two especially bring out the aspect of M ; and of these latter two the ever eluding ideal involves V to a conspicuously greater degree than the ideal that we expect to ultimately catch hold of and make our own. The eluding ideal is somehow ever hidden from us ; it will never completely show itself ; it is never a perfect presentation : the realizable ideal is taken by us as a *possible* perfect presentation. In every one of these three cases, it should be noted, the conception of the ideal is bound up with the idea of peace and quiescence, though in the first case the ideal is conceived as eternally realized, in the second case as realizable, and in the last as never completely realizable.

In whichever sense we conceive the quiescent Real, does not the passage from $U_1$ to $U_2$ promi-

nently imply movement? Suppose we take 'eternally' in the first case in a somewhat elastic sense and picture to ourselves the *rise* of the infinitely rich order from the order of utter barrenness as represented by $U_1$; and let this rise be sudden. Is this not the picture of a sudden convulsion, by which the bare consciousness of presentation is made to assume a form and character so grand and complex that human imagination is fatally baffled in portraying them to itself? Is this not the miracle by which the primordial mass of nebula is at once metamorphosed into a universe of infinite grandeur and richness, the primordial speck of protoplasm in the primitive waters of the globe is at once worked up into all the glory and complexity of our Flora and Fauna? The idea is that of sudden birth and metamorphosis: movement, M, is prominently there. The question is of course at bottom a question of intuition. Thus we are in a position perhaps to lay down the following relation:

$$U_1 : U_2 = P\mathbf{MV},$$

where, as before, the ratio represents derivation, and the two bold types represent the aspects of the cycle that have been especially involved in the derivation.

Lastly, we have seen already that when we take our universe as a gradual and partial reproduction of, or preparation for, the Q.R., we undoubtedly put emphasis on the aspects of M and V. It is again a universe that has been actually presented in consciousness: it is something given, and something

believed as a gradual and partial reproduction of something else: we may say therefore that all the three aspects of the cycle have been in a way emphasised in our world at any moment when it is thought in relation to the Ideal our truth is but a foretaste of the ideal truth, our weary and anxious existence is but a striving after peaceful and beatific immortality. We are not infrequently haunted by this dream and suggestion whatever we may think of it in our sober, matter-of-fact moments. The question is not one of absolute fidelity of our dreams to the verities of existence, but one that addresses itself to the necessary implications of our dreams themselves. With a slight wave of philosophical smile I may brush aside some of the more imposing orders of my universes: $U_0$ perhaps is but an insufferably dull and unrelentingly absurd abstraction; $U_1$ is perhaps an order too hypothetical and pedantic. $U_2$, $U_a$ and $U_b$ are perhaps but obstinate reminiscences of old-world curiosities—phantoms over which a Plato might be ecstatic, but which cannot stand a moment's examination in the dry, sober light of up-to-date speculation. But it must be clearly perceived that these so-called curiosities have been immensely important, not only philosophically but practically. Pure consciousness has never awakened a serious interest and an eager response in the bosom of the West which has ever been grimly practical; but it has been the crown of glory to some of the stateliest forms of Eastern

thought. Buddhistic Nirvâna is of course not a condition of pure consciousness, but the Fact of Vedanta is : this latter has endeavoured to get at it not only by sustained speculative abstraction as I myself do, but it claims that it has practically devised a way—an experimental method—by which the condition of pure consciousness may be *realized* in us : it is thus not merely a question of theoretical limits, but one of experimental demonstration. What shall we say in the face of this challenge ? Pure consciousness, again, is believed by the East not as a condition, insufferably dull and dreary, from where all the interest and romance of life have vanished—a *reductio ad absurdum* of all that imparts to our living its whole worth and significance. Not at all ; pure consciousness has been to the East the home, the substratum, of the True, the Good and the Beautiful : it is the first principle from which all existence and interest in existence proceeds : the existence of life is only a mode of infinite existence, and the joy of life is but an echo of infinite beatitude, and this infinite existence and beatitude are only aspects—if I may say so about a condition which is absolutely simple and unrepresentable—of pure consciousness We have preposterously inverted propositions in life : All enjoyment comes from consciousness as such, and yet we suppose that variety and polarity are absolutely necessary for enjoyment : what inalienably belongs to the plenum, the sustaining breath, of life, we have transferred to the pragmatic facts ; knowledge

and existence too have been identified with variety, change and polarity—here also, while skimming over the chequered surface of the sea we have ignored the colossal depths which are in repose and which nothing can stir up. But we need not dilate at this stage on the relative merits and interests of our orders of universes; I have merely hinted that in the East particularly such an apparently absurd order as $U_0$ has been one of the toughest articles of faith and one of the most insistent ends of practical realization. This being the case we cannot summarily brush aside the abnormal orders that we may have admitted in our scheme of experience. Consistently with what we have remarked before we have

$$U_2 : U_3 = \mathbf{PMV},$$

where also the ratio and the bold types do the offices which they did in the previous cases. The question, it need be hardly repeated, is a question of emphasis. It remains to be remarked, however, that the first relation, *viz.*, that between $U_0$ and $U_1$ is a matter of P-emphasis; that the second relation, *viz.*, that between $U_1$ and $U_2$ is a matter of P-and-M-emphasis; and that the third relation, *viz.*, that between $U_2$ and $U_3$ is a matter of P-M-V-emphasis. At any rate, this is how the orders deliver themselves in my reflection.

Before leaving this subject of orders it will be advisable perhaps to attempt a classification of the orders in the light of the foregoing explanations.

I will merely suggest a classification and shall not pause to examine its foundations. Thus :

I. $U_0$.........no P.M.V. or $E^O$.

II. $U_1, U_2, U_3$.........$E^{P'}$ (P-emphasis ; the stress on the aspect of P is their common feature).

III. $U_b$..........$E^{M'}$ (M-emphasis).

IV. $U_a, U_4$..........$E^{V'}$ (V-emphasis).

In the foregoing analysis and classification I have attempted to give a faithful version of the deliverances of my own intuition as in this fundamental science of Fact one must ; but I am not sure how far these results will tally with the results of those who are greater adepts in the dubious but indispensable art of self-analysis and introspection.

I have remarked already that each of these orders is an infinite fact—even the infinitesimal fact is an infinite fact with its infinitude taken with a difference of sign. The statement in regard to the particle will require perhaps a slight amendment. In abstract dynamics the particle is represented by a mathematical point, hence to such an entity the symbol $f_1$ cannot strictly apply. That symbol was meant for our ordinary conception of a particle : it is a finite portion of matter, small and taken as a unity. The particle of dynamics is on the other hand an infinitely small portion of matter distinguished from the atom by its absolute and abstract nature : the atom may break up one day,

and its indivisibility may be only relative, but the particle is absolutely safe. Again, the atom may be a centre of chemical properties and attractions, but the particle is a naked entity divested as far as possible of properties and is a centre of forces such as dynamics alone will be content to take cognisance of. The atom is too concrete, too unscientific to serve the ends of an abstract science of Motion Hence the particle has been installed in its place. Be that as it may, we must hasten to distinguish between the infinitude of the particle as represented by the point and the infinitude of the monad. The particle is an absolute infinitesimal, and let us regard this kind of infinitesimal as *inverse* infinity or $\infty^{-1}$. The monad we have previously represented by negative infinity or $-\infty$ The difference between these two kinds of infinitude is patent to plain reflection. Thus we have—

$$\text{Universe} = +\infty.$$

$$\text{Monad} = -\infty.$$

Particle as represented by the mathematical point $= \infty^{-1}$. Also, we have the relation $\infty \times \infty^{-1} =$ unity. The infinite multiplied by the infinitesimal will give us unity. What does this operation and this result mean? Sir W. R. Hamilton's new turn to the operation of multiplication in mathematics gave the possibility of the powerful science of Quaternions: even the fundamental notions of mathematics are thus flexible. Suppose a given vector $\alpha$ is changed by an operation into another

$\beta$; the operator which thus turns one vector into another may be regarded as a multiplier. Here is undoubtedly a more natural and concrete notion of multiplication than (that of continued addition) what is accepted in Algebra. We must push a little way further in order to get at the most natural and concrete notion of multiplication. This is not the place to enlarge upon the notions of the fundamental operations of mathematics; but I venture to say nevertheless that in its concreteness multiplication is the idea of any operation by which a given fact is supposed to change into another. Thus when a fact $f$ is changed into $f^1$ we may regard the operation believed to be involved in the process as multiplication. Have we not called this fact-operation previously?

It is thus by multiplication that a homogeneous tissue differentiates itself into a complex organism, a nebulous consciousness articulates and enriches itself into a system of experience, and a vague universe of presentation bursts forth into the splendour and luxury of the Quiescent Real. Simply, multiplication means the passage of the one to the many, the simple to the complex, the vague to the systematic. This is perhaps too subtle and metaphysical a notion to supply a tenable basis to such an exact science as mathematics; but none the less we must make bold to suggest that the philosophical notion just alluded to is the concrete original from which Hamilton's conception of multiplication as well as the popular, including the associative, distributive and com-

mutative laws, have been unconsciously deduced by successive veiling and abstraction.

The notions of the fundamental operations in mathematics will come up for consideration shortly. The meaning that we have assigned to multiplication will suffice for our immediate purpose. Now, suppose we apply the process of multiplication to our unbounded universe at any moment we conceive the process by which the infinite universe dwindles down to the infinitesimal particle. Can we not interpret the operation $\infty \times \infty^{-1}$ in this way with some show of fairness? As we are conceiving the process of the reduction of the universe to the point, there is one circumstance that seems to strike us most: the unity of the universe is a unity in multiplicity, but this acquires a tendency to become *simple* unity: the fact is gradually forsaking its nature of manifold—the indescribable unity-in-manifold to which we pointedly referred at the outset of this essay—and is assuming the character of bare, homogeneous unity. By the operation we have imagined to ourselves one kind of unity passes into another kind—the infinite All becomes the inflnitesimal One. This perhaps will be a feasible interpretation of the relation that we set to ourselves to study a moment ago. The notion of multiplication involved in this will certainly call for further elaboration, but we propose to respond in an other place.

We must not imagine, however, that the infinitude of the Fact really vanishes when we are

making an effort to conceive the infinitesimal particle. In a distinct *conception* of the particle infinitude persists in two shapes. First, there is of course the unbounded plenum of awareness in which the conceived particle exists and is especially taken note of: this indeed is a kind of infinitude which refuses to be compromised by any of our operations, whether actual or conceived. Secondly, particle is conceived as an *infinitely small* portion of matter, and therefore essentially involves the notion of infinitude, though of the inverse kind. The notion of unity suffers a prodigious change when we pass from the universe to the particle.

12. *The Poles of the Fact and the Triad.*

We should also briefly consider the relation in which the poles of the Fact, *e.g.*, $\alpha$, $\beta$ and $i$ stand to the aspects of fact-life, *viz.*, PMV. On the face of it, it is clear that the pole $\beta$ and $i$ of a fact bring out the aspect of presentation. They together constitute the pole of the actual with which $\alpha$ as the pole of the possible is contrasted. There is undoubtedly a clear and significant distinction between the base and the index of a fact, but they agree in this that they are both given actually in consciousness. $\alpha$ on the other hand is the suspicion of possible development which vaguely or clearly attaches to every normal fact of experience. I conceive reality as being partially hidden from me and gradually meted out to me: $\alpha$ therefore is clearly the aspect of the Veil in the life of the fact.

I do not commonly take my universe as all presented, but as Reality or Idea partially hidden and partially manifested. Between these two aspects M negotiates. The base and index of a fact are conceived as growing at the expense of the co-efficient : there is a breathless flux from the side of the possible to that of the actual.

The Veil appears to hold the fact in an all-round possession. Not only the entrance but the exit of the actual in consciousness requires the mysterious veil. The element of the actual in an experience is conceived as growing at the expense of the co-efficient of the veiled possible, and this growing presupposes as much the appearance of new fact-sections as the disappearance of the existing. The new fact-sections are believed to spring forth from the dark depths of the possible ; but *where* do the existing disappear? Clearly fact-sections issue from the dark and disappear in the dark : we can hardly, if at all, arrest them and keep them standing as they appear : like the soft hues of the sunset they are perpetually changing—we cannot say that for two consecutive moments the same hue has persisted, or that the same fact-section has lived. Now, the mystery which marks the entrance of a fact-section is apparently not the same as what marks its exit: birth is quite as much mysterious as death, but it must be a confusion to regard them as alike. Both presuppose the Veil, but the Veil cannot be of the same kind in both cases. It behoves us to note the distinction not merely because it is incidental

to our present enquiry but also because it is philosophically important.

The principle involved appears to me to be connected with the Principle of the Curve. The Veil has already been conceived as negative presentation: to each also we have been able to attach the notion of degree. Whenever we have a process gradually followed by its reverse we are bound to have the curve. Mental life—which in its concreteness is the life of the universe—can never be ordinarily represented by the straight line; the straight line is only an abstraction of the curve. Mental life must ordinarily always be represented by a curve with maximum and minimum positions. Now, if we represent maximum presentation by a maximum position of the curve, and maximum veil —or, what is the same thing, minimum presentation —by a minimum position, we may find a somewhat apt expression for the difference between the appearance and disappearance respectively of a fact-section in life. In appearing a fact-section gradually rises to the height of presentation: the passage is from veiled possible to the presented actual, from *most* concealment to *least*. Here we have one aspect of the curve of Life: this is birth. Theoretically of course the fact-section which we thus trace from utmost vagueness to utmost definiteness, from the embryonic condition to the adult, may break up into a number of uncompromising A's and not-A's: the various stages of the given fact-section are perhaps really different

fact-sections. But logic and metaphysics apart, let us take a commonsense view of the affair. In commonsense the rise of a fact-section is as we have first pictured it to be—an ascent from a minimum to a maximum position of the curve. To careful reflection the full blooming morn of a fact is never ordinarily without its prelude in the paler dawn, and the settling gloom of a fact retreated is never ordinarily without its introduction in the brighter twilight. The appearance and disappearance of a fact in consciousnes are sometimes taken by us to be unceremoniously abrupt because ordinarily we are in no mood for accepting the fact in its full concreteness: the one o'clock gun, for instance appears to take me by surprise and depart unceremoniously because I accept it in a very partial or abstract way: the unveiled experience of the moment is undoubtedly of the nature of a curve as would appear from direct reflection. Thus when a fact-section appears it mounts up the ascending aspect of a curve—it passes from most veiling to least; when it disappears it slides down the descending slope of the curve—it passes from most presentation to least. Appearance has been conceived as the passage of a fact-section from possibility to actuality, from the pole of the co-efficient to those of the base and the index. Now, shall we conceive disappearance as merely the reversal of this process, as the passage of a fact-section from actuality to possibility again?

We may in a rough way so conceive; but there

is an important distinction between the two aspects of the operation. In the aspect of appearance, in the birth of a fact, the process is clearly '*possible and actual*' : at every point or stage of this aspect the fact being born is conceived as something possible as well as actual, with the emphasis of regard laid on 'possible' rather than on 'actual' : it is a possibility actualizing itself more and more. In the aspect of disappearance, in the decay of a fact, the process is obviously '*actual and possible*,' with the emphasis of regard laid on 'actual' rather than on 'possible' : an actual fact is becoming a possible one. But does it become a *possible* one? Do we not rather conceive a disappearing fact as being irretreavably lost—as gone past recall? Possibly so; no fact indeed can be recalled to life which has become once dead and stiff. But still do we not believe the lost fact as persisting in *some* fashion, as capable of being rehearsed in *some* fashion? Between the fact gone and the fact recalled no absolute likeness is of course thinkable : but something short of absolute likeness can certainly be believed as subsisting between them. Otherwise how should we explain our belief in the phenomena of persistence and memory? A fact-section in disappearing is believed by us as also persisting in some fashion and capable of being revived in some fashion : there is here no question of absolute, unrelenting persistence or of absolutely undeviating revival. Thus a fact that dies also lives : it lives of course with the configuration of

its poles and PMV somewhat altered : between life and life-in-death, between actual presentation and veiled persistence there is of course a vital distinction. The fact is believed as not only living in some manner in death, as persisting in some manner while disappearing, but also as capable of being represented in actual experience in some manner.

This is the basis of what we are familiar with as the elasticity of a physical substance. It is as we have seen the mutual disposition of two circumstances of a material substance, *viz.*, stress and strain. Now, this conception of the relative disposition of stress and strain can be readily extended to the life of the fact. A fact is disappearing : this means that its actual configuration is being changed, this tendency we may call the strain of the fact—it is the fatal disposition of a fact to change, to cease to be what it is, in tone and configuration. But as we have also conceived in our theory of fact operation, a fact is equally fatally disposed to revert to its former state, or rather to continue in its given state : this is persistence and the disposition may be called stress, in a rather partial sense of the word. Thus Fact is elastic, and material substance which is only the Fact partially veiled is also elastic. In the elasticity of the Fact is contained the possibility of its persistence and revival. The vital process which is known as metabolism is also an illustration of fact-elasticity. A certain living tissue is swayed by two

fatal dispositions : One induces it continuously to stray from a certain system of configuration, the other continuously helps it to keep close to this pattern of configuration. The actual configuration of the tissue at any period of its life-history is of course the resultant of these two tendencies. Physical elasticity and vital metabolism can thus be regarded as illustrations of one and the same process, *viz.*, fact-elasticity.

We believe that when a fact of experience disappears it leaves behind it a condition which bears a twofold character : it is a condition in which the experience in question is supposed to persist in some fashion—a sort of vestige or trace ; it is also a condition which is supposed to be a possibility of the experience in question being revived in some fashion. The former has been called predisposition in mental science and the latter memory. We may quarrel perpetually as to where precisely memory is seated and what precisely are its conditions ; but the underlying belief in the phenomena of memory requires both the persistence in some manner of a past experience—no matter where and how—and the possibility of this potential condition representing itself—no matter when and how. The persistence which underlies the phenomena of memory is veiled persistence : it is a condition of V-emphasis. Memory is a special kind of representation : it is a condition of P-emphasis. So that the disappearance of a fact leaves behind it a belief that it has passed to a condition of V from which

it is but possible that it will again rise to a condition of P. As we have remarked before the veiled and the represented conditions need not be absolutely alike copies of the original experience. We need not believe that what has persisted after the disappearance of an experience is the same as the experience itself: if it were so how should we know that the experience has disappeared at all? To disappear is certainly not to continue, to die is certainly not to live. But nevertheless we can conceive a kind of continuance after disappearance and a kind of life after death. Our conception of this kind of continuance and life is certainly very confused; and in philosophy there have even attempts to do without this kind of continuance. Why should we believe that a present experience is a representation of a past one? That such a belief involves a good deal of veil need not be pointed out at so late a stage: the total experience which passes for the revival of the past is undoubtedly an original and unique experience, as every experience past, present or future must be. But let us waive this point; suppose we say with commonsense that the present experience is a recollection of the past. What does this belief presuppose? It will presuppose *either* of two things: The past experience in passing has left behind it a predisposition—no matter where and how—which being now acted upon by present conditions produces the recollection: my yesterday's experiences are thus stored up in a condition of veiled and imperfectly under-

stood persistence, and the total assemblage of conditions which produce what I take as the recollection of this past experience involve this condition of veiled persistence as well as other conditions : the former condition as well as the latter are of course all present conditions—though the former may refer back to a past while the latter do not. It is thus that I remember my life of yesterday. The difficulties about the problem of memory would appear to arise not so much in this postulate of mere persistence as in that of the manner and locus of persistence : Granted that a past experience in disappearing has persisted ; but *where* does it persist and *how* ? Does it continue as a sub-conscious idea or merely as a molecular configuration of the brain-tissue ?

But this is by the way. There is another way in which we may seek to explain the problem of memory. There is no direct proof that *anything* has persisted between the disappearance of the past experience and the appearance of the present one which remembers it : the sub-conscious idea as well as the cerebral disposition are after all but hypotheses and *not* facts that can be readily and directly tested. The present pulse of experience appears however to remember a past pulse : but while we are in the present pulse—and we are ever in the present pulse—we cannot pertinently seek to explain it by dragging in something which is not in the present pulse. Suppose the present pulse B remembers the past pulse A. Does B involve A

or not ? Of course it does. There is also a belief in B that A which is being remembered in itself is a *past* pulse, is something other than itself. But this belief is also inside and not outside of the present pulse, B. Hence neither the circumstance that B involves a remembrance of A, nor the circumstance that this latter is *believed* to be some phenomenon outside and independent of B, can really establish A as a fact other than B and conditioning it. This indeed is radical empiricism—we are hopelessly shut up in our concrete universe of experience at any moment, and can never seek to establish anything beyond it without surpassing ourselves. But the concrete universe, it must be recalled, is the *reductio ad absurdum* of all hypothesis regarding fact—whether immanent or transcendent : it is dumb and alogical. We must in some manner compromise the unrelenting concrete to formulate a theory. If, for instance, we only say that B involves a remembrance of A with the belief characteristic of remembrance, and that beyond this we must despair of finding an *explanation*, a sufficient reason, we are fairly safe ; but if we venture to say that B, the present pulse, remembers the past pulse A, but that such remembrance need not imply the persistence of *anything* in the interval between A and B, we are merely playing fast and loose with our articles of faith. Either let us have nothing to do with a really *past* pulse at all—let us if possible live unstintedly in the given universe of fact and talk of no theory *about* it. We *are* indeed

ever living in the concrete universe of fact and that in spite of all theories about it ; but let us for one moment disburse our minds of the belief that the theories that we may get up concerning it can really be made to go round it—to be true of it. Such a mood of complete abandon to the concrete is perfectly intelligible though perhaps not commonly a feasible one. Or, if we must think and talk about our facts, let us think and talk with perfect candidness. It is no serious philosophy to stop half way in the midst of an essay at theorizing. I do not see what right we have in splitting up our concrete life into pulses, past, present and future at all : the concrete is always actual and all-inclusive —we can make *no* reservations whatever in describing its fulness. To say that life consists of a series of pulses is already to climb down from the unrelenting concrete—the safe vantage ground of radical empiricism. After you have installed these pulses and believed them to be different facts, you cannot forego the further task of somehow bringing them together. They *were* together in the concrete presentation—discriminated perhaps, not logically but intuitively. Your philosophy has parted them from one another and it cannot shirk the responsibility of again bringing them together. Thus if you believe that B remembers A—the former being a present and the latter a past pulse—why must you refuse to believe that something has persisted—no matter where and how—between the disappearance of the one pulse and the appearance of the other ?

I am merely for following up a belief involved in fact-presentation, and not for inspecting its credentials. My belief as to the persistence of something in some manner during the interval between A and B may be correct or false; but at any rate the belief is unquestionably there, and it seems to me to be no real gain to theory to admit *temporarily* different pulses of experience into our scheme and yet to refuse admittance to the thought of connecting links—Hume and empiricism notwithstanding—amongst them.

Thus we have to choose between two alternative explanations of the phenomena of memory. A in disappearing leaves behind a residual disposition which being acted upon by proper conditions produces an experience, B, which we take as the remembrance of A: this is one explanation. The pulse A is followed by another pulse B which involves *somehow* a retrospective thought of A: in this latter we merely accept the fact of memory but refuse to go behind it. This attitude is not strictly radical empiricism as we have seen. Concrete existence will have nothing to do with pulses coming and going. At any rate, this attitude is not scientific. To say merely that a state B somehow remembers a previous state A is undoubtedly a perfectly safe statement of fact, but it is no explanation of memory. The moment I proceed to link together A and B in any way I must drag in the notion of persistence of some sort. Let us for one moment ignore the cerebral

aspect of the question : let us only admit one pulse being followed by another. Shall we say that A in passing away 'bequeaths' something to its successor, or that the latter becomes in some way an heir to the former ? Have we not already brought in the notion of persistence surreptitiously in saying this ? The matter is not sensibly improved by calling to our rescue the philosophy of association. Association may have its basis in the cerebral connexions ; but even cerebral connexions pressed into our service will not render the problem of memory easy of solution. Suppose $C_1$ and $C_2$ are two cortical centres between which a special connexion has been established ; suppose also the irritations of the two centres correspond respectively to the two psychoses A and B. Now, when $C_1$ is excited we have the thought A ; and as the excitement passes on to $C_2$ we have the thought B. The cerebral affair is ordinarily hidden from our view, so that we fancy that the thought A has directly recalled the thought B, and that there is a sort of mysterious influence between the two thoughts. There need not be any direct influence between them however ; whatever real influence there is subsists between $C_1$ and $C_2$ ; the stress between A and B may be, for ought we know, only a figment of our own imagination. But can we altogether do away with the notion of persistence in this latest psychology of association which has emptied the mind of all unconscious ideas and influences and attempted to account for the order

of mental life by the too readily serviceable cerebral mechanism? At the most we have been able to shift persistence from the mental to the cerebral aspect of the fact. A and B as mental states must fleet, but are not the cerebral centres $C_1$ and $C_2$ which correspond to them tolerably stable arrangements in the cortex? A past psychosis is forbidden to exert any direct influence upon a present one but is not the cerebral connexion between $C_1$ and $C_2$ which is the basis of the *apparent* influence between A and B, a fairly persistent molecular arrangement in the brain? Again, how should A and the excitement of $C_1$, B and the excitement of $C_2$, be correlated with each other? The brain-state and the mental state are now classically parallel: they are but two aspects of the same inscrutable process: philosophy has even invented the mind-dust to keep pace with the infinitesimal pulse of nerve-agitation. But what does this parallelism, this duality of aspect, this correspondence between neurosis and psychosis, really mean? It may mean either of two things. That parallelism and duality of aspect are only figures of speech to state a simple fact of experience, *viz.*, that when we have a given neurosis we have also a given psychosis; we do not pretend to go beyond this simple fact—we do not know how this observed correspondence between the two is effected. This is Humian empiricism and we cannot quarrel with it so long as it chooses to stick to its guns. But this is no explanation, good, bad or

indifferent, of the mystery. Or we may believe that the one actually influences the other as they appear to do—this is Reid and commonsense philosophy. But this is only the beginning and not the end of the mystery of the interaction between mind and matter—from the never failing womb of this Mystery are born quite a host of theories to add little to the enlightenment and much to the confusion of the poor human race. We have not here instituted an arbitration court for all such old and garrulous theories. Our own responsibility in the matter is comparatively simple.

The fact is according to our view neither mind nor matter, neither a configuration nor a series. We may indeed think of it either as mind or as matter or as both; either as a configuration or as a series or as both; but the thought together with the belief which accompanies is not equivalent to the fact which is being apparently thought and believed. No human survey can go round the Fact itself: hence all our ideas and beliefs about facts are only apparently and pragmatically relevant. But though the nature of the Fact is unthinkable and unspeakable, we are fatally disposed to think and speak about it, and even ordinarily to take our thought and speech concerning it as not only relevant but exact. The gods who preside over our destinies have thus ordained the birth of philosophy out of a material which in its essence is absolutely unpromising for speculation. Philo-

sophy is born nevertheless ; and by the processes of P M V the dumb alogical Fact is made to yield a richly and agreeably various harvest for man's speculative and practical consumption. Every theory presupposes the mighty Veil : no theory can be wholly consonant with the Fact By setting up a standard of truth we may of course distinguish between a true theory and a false : but if truth be conceived as the *perfect* correspondence of a theory with the fact, it is abundantly clear in our own view that every theory is false. All the same, we have developed a theory of fact-operation ; we have however grown it in a hot-house. *Within* this hot-house we cannot be well advised to allow our theory to remain crippled and stunted—let us rather courageously allow it to grow to the fulness of its stature. That is why we have sometimes parted company with so-called radical empiricism and followed the guileless lead of commonsense : to have science we must to a certain extent draw not only upon commonsense but common imagination—we must admit not only what we actually have but also what we think and imagine we *should* have.

We have now saved the idea of persistence from dissolution. This idea, it must be noted, is not a mere accident of speculative anxiety. Persistence is quiescence and quiescence inheres in the essence of reality. Awareness of the type $U_0$ is essentially a quiescent universe : we can conceive of no movement in pure awareness as such : it is

like the unbounded space emptied of all its contents. Far from being a function of experience such awareness is its very sustaining breath: the cycle PMV makes life a consciousness of persistence *and* change—makes it appear what it is in itself *and* what it is not. No operation can possibly suspend altogether the essential nature of being and consciousness, but it can make it appear itself as well as its opposite: *this* is implied in its alternate veiling and unveiling. No ordinary experience is an experience of pure persistence, and none is an experience of pure change: the opposites meet in the life of the fact. The thought of persistence in the reading of its life-history is not a mere accident therefore: the thought has its basis deep laid in direct intuition—we feel persistence and not merely think it. Of the two feelings —persistence and change—the former is more fundamental: it is this that remains after we have pushed as far back as $U_0$. It would be preposterous to regard it either as a forced or an illusory feeling, and the feeling of change as alone normal and essential. This is not the place to decide between the rival claims of these two feelings to primacy, but I will say this that our ordinary experience certainly involves both, and that if it does we cannot regard the thought of persistence as a mere exegency of theory. We do not admit it because theory requires it, but because life directly and unquestionably involves it. The conception therefore that a fact-section in dis-

appearing persists somehow and is inspired by a tendency to reappear in some manner, is not an altogether baseless hypothesis. The persistence of matter and energy, the persistence of life after the apparent dissolution of the organism, the continuity of the germ-plasm—in fact all the thought which has given to science her stability and earnestness—is modelled unconsciously after the persistence of experience to which I have more than once alluded. The rigid, immutable world of Platonic archetypes was not altogether a queer conception it has its basis firmly laid on the fundamental persistence in the life of experience. The substance of this life is quiescence and change is but its shadow : this doubtless is the keynote of that sublime philosophy. The ether is an aspect of the universe of experience, and in the ether persistence has a place in the vortices which are believed to be our indestructible atoms. Whatever the atoms may be, persistence cannot be altogether scared away from matter, for persistence is bound up with the essence of experience which appears through the veil as matter, as mind, as life. The atoms may not be safe halting places for latest culture we may be dislodged and driven back even from these. But can material philosophy do without *any* halting places ? The idea of persistence cannot be ousted even from the world of energies of which Proteus seems to be the presiding genius—the realm of M-emphasis. However the energies may change places and forms, can they really sponta-

neously grow and wither? Life again is fatally disposed to procreate itself—this surely is persistence in a tolerably good sense; Weismann's continuity of the germ-plasm is a bolder step in the vindication of persistence in the ceaseless anabolic and catabolic processes of the living being; the belief in the transmigration of the soul is old even as our hills are old and it is certainly destined to die an exceedingly hard death even in the ruthless fire opened by physico-physiological culture of to-day; lastly, belief in the immortality of the soul has proved to be one of the most tenacious articles of human faith. The fabled Phœnix is the emblem of persistence. The idea of persistence has so stoutly persisted in history, because history is the flow of experience itself, and experience assuredly hinges upon an intuition of persistence.

Can we then in all cases conceive disappearance and death as the descending aspect of the Curve of existence—as the passage from actual presentation to possible presentation? It is now clear that persistence of some sort is the connecting link between actuality and possibility, and also between possibility and actuality. In order that an actual A in disappearing may again be represented in some manner, we must think of persistence of some kind between the two conditions; it may be a persistence of substance, or a persistence of mutual influence, or a persistence of law. A seed is a possible plant: evidently we must conceive of

some kind of persistence between the one condition and the other ; a grown up plant is also a possible seed—here also persistence must serve us. In general we may lay down this as a fundamental proposition of thought. Whatever is actual is possible. We inveterately believe that a particular configuration, physical or mental, that has been an actual presentation *may* again be an actual presentation : whatever has happened may happen again. The two presentations or happenings may not, however, be absolutely alike : we can never bathe twice in the absolutely same stream. Between what disappears and what reappears there is undoubtedly a more or less divergence, and the fact that we commonly take them as mere repetitions must be attributed to our inveterate habit of veiling and abstraction. Nevertheless the belief that what is actual now may become actual again is obstinately in us. It will be instructive to notice the different orders of the **Curve of existence** according to different values of the slope between actuality and possibility. The curvature between actual and possible will be manifest from the consideration of the following typical cases.

Case I. Take $U_0$ or pure consciousness. This is ever unflinchingly actual for us. The actuality of consciousness never goes, it never becomes a merely possible condition for us. We may admit unconscious ideas or reject them ; but there is apparently no conclusive proof that we have ever

real lapse or suspension of consciousness in our life. In a certain sense, consciousness is also possible for us. I have a stretch of consciousness now and I believe that more stretches of consciousness will come in my life, or rather that consciousness as such will continue. But is there any difference of curvature between the actual stretch of consciousness *as such* and the possible stretch of consciousness *as such* ? I see none. Such continuity of pure consciousness therefore may be fairly represented by an infinite straight line. The idea of straight line is indeed a special expression of the fundamental fact of the life of experience, *viz.*, awareness as such.

Case II. Suppose we next take the universe of the Quiescent Real. The possibility of a novel order is indeed shut out from the life of this universe as it is excluded from awareness as such. The Q. R. cannot change and grow. But though it does not change it continues. At any moment, therefore, in the life of Q. R. we may conceive a possibility of continuance—a bare, homogeneous continuance, an absolute maintenance of the *status quo*. Here also there is evidently no difference of curvature between the actual and the possible. Will the right line serve us here too ?

Case III. In our ordinary experience there *is* commonly a difference of curvature between any actual stretch of experience and a possible : the possible is a more or less novel order : there is no unrelented monotony. Suppose now a given fact-

section disappears ; to what extent do we believe that it may reappear again? Its persistence and its revival are circumstances that we have already dwelt upon : we have pointed out also that neither of these circumstances is absolute : the persisting potential fact cannot be absolutely the same as the actual fact gone already—the revival also is not an absolute rehearsal. Hence in the present case, the curvature or the rate of change of direction cannot be zero. The continuity of our mental life cannot be justly represented by a right line. Yet the curvature is rather low, is believed to be low, between what is presented and what is represented, between what I feel and what I remember about the feeling. If in the first two cases we had absolute rectitude, curvature of the zero degree, in the present case we have an appreciable deviation from the rectitude, a curvature that we might look upon as of the first degree.

Case IV. In mental life we might profitably consider various shades of curvature between an actual experience and a possible. Such a consideration could not fail to be of material interest in mental science. Here however I would hurriedly refer to two typical cases of curvature, one in the world of life and the other in the world of matter. An embryo is a possible plant or animal. The systematic development of an embryo into a plant, for example, cannot of course be explained as a fortuitous construction throughout—an assemblage or configuration of molecules brought about

by chance— ; a very pronounced spontaneity will in any case have to be read into the unpretentious germ in order that its wonderful life-history may be at all intelligible to us. To scientific inspection the constitution of the germ is simple enough : but we need not take the result as decisive. Let us believe, as formerly we have been inclined to believe, that the germ is a veritable universe teeming with wonders that lie concealed beyond our most searching glasses. Nevertheless between the germ-world as the actual and the full-grown plant as the possible there is a far cry : the curvature is considerable. We need only compare this curvature with that between a presentation and its memory to be in a position to characterise it. Let me roughly call this curvature of the second degree. In this fundamental science the degrees of curvature are to be decided of course by reflection.

Case V. Lastly, let us take a typical case in the material world. Suppose a given configuration of material particles is destroyed : what assurance have we ordinarily that this configuration of particles may again approximately turn up ? There are of course several grades of the kind of assurance that we ask for ; but let us take an extreme case. A given assemblage of matter—say the dried leaves that are strewn about me at this time—is disintegrated past all recovery : the actual is lost for ever : what hope of recovery or revival have we as we are witnessing this undoing ? That matter cannot be completely

undone—both in form and in substance, both in configuration and in mass—is indeed one of our staunchest articles of faith ; but do we believe that the same mass can turn up again in the same configuration or nearly the same configuration? Can the dried leaf which has murmuringly returned to dust and blown about by the wild, restive winds draw together and coalesce again into a rehearsal of its past existence ? Does our latitude of physical probability extend so far as that? I have purposely taken a general case in which the operation of rhythmical natural laws do not render the periodical recurrence of certain forms or configurations not merely a theoretical possibility but a fairly assured order. Suppose a system of homogeneous waves is being propagated along the surface of a liquid ; at a given instant the particles of the liquid in a certain place are in a certain configuration ; at the next instant they lose this configuration and take another ; at the third instant the particles reassume the first configuration This is a case in which is involved the law of harmonic motion. But this is a special case upon which we cannot generalize : we cannot say for instance that the particles of a dry, crushed leaf and those of a dissolved crystal will assuredly and periodically rearrange themselves into a similar leaf and a similar crystal again. So far as *these* groups of particles are concerned those configurations are perhaps lost for ever. Yet even in such a general case we are not indisposed to hoping

against hope. What has been possible once may be possible again : in the ceaseless permutations and combinations of the world-dust can we really send a crushed leaf or a dissolved crystal into eternal damnation ? May not the particles, now gone mad, wake up one fine morning of the millenium to find themselves drawn together by mysterious family preferences and rehearse the long forgotten leaf or crystal again ? This is no poetry really, but one of the toughest tunes arising from the credulous cords of human nature. We *do* believe that what has been possible once may be possible again. We need not pause to inspect more narrowly the credentials of this belief ; but it is certain, at any rate, that possibility involved in this case is of the thinnest texture. Here the curvature between actuality and possibility is extreme. An appeal to direct reflection ought to settle this point also.

The whole science of Probability hinges upon these degrees of curvature. The fundamental basis of quiescence and assurance is awareness as such ; this is the surest ground on which we stand. As ill luck would have it, consciousness has been trifled with in the history of thought even by men who have done most to enlighten us : it has been an epi-phenomenon, an accident or a function. But all this, I venture to think, must be attributed to the action of some lingering refracting media in our effort to flash light in upon reality. To me there is no probability about consciousness as such : it is assurance itself : I cannot conceive it other-

wise than as absolutely continuing, as complacently self-sufficient, as scrupulously maintaining its *status quo.* It is the level of *no* probability, not simply the level of minimum probability. It is only after ignoring the nature of consciousness that we think that more stretches of consciousness are possible to an actual stretch : in itself, apart from ignorance, it is *the* stretch and not a *series* of stretches at all ; hence, consciousness, apart from veiling, is unspeakably actual. Even attaching a possible to the actual in consciousness we cannot, as we have seen, create a difference of curvature between one stretch of consciousness as such and another stretch. The Q. R. also we have represented by a right line : but it must be plainly seen that there is a material difference between $U_0$ and Q. R. The former being an absolutely simple, homogeneous condition of existence cannot be conceived as being either changed or undone : all known change presupposes diversity and differentiation. Let us try to imagine awareness *as such* as growing or ceasing and we should assuredly fail in our attempt. A thing or a condition must have a form, a configuration, before it can be thought as changing or ceasing. Q. R., however, is a condition of infinite diversity ; by our definition it is quiescent no doubt, but there is everything in the conception of infinite diversity to tempt us to regard it either as the finished result, actual or possible, of a stupendous process, which need not grow further or as a temporary breathing place of

world-evolution from where it is ready to take a fresh and vigorous start. Thus Q. R. may be either a statical result dynamically achieved, or a a relatively stable height of the world-curve with a backward *as well as* a forward slope leading respectively to and from it. In either case, it is only through courtesy that we can let alone the Q. R. in the enjoyment of its doubtful quiescence. The metaphysical grandeur of the Q. R. has been superb, and humanity has gone upon its knees before it in unintelligent awe, but the mighty Q. R. has always been nervous in the calm, steady light of close inspection. The boundless plenum of experience—pure awareness—has indeed been an insufferably dull abstraction for most of us : we crave for modes and forms ; we cannot stand the plenum itself. Nevertheless this plenum has no mystery about it—its very essence is to shine itself and make objects shine even as the sun shines itself and makes objects shine. The Q. R. is an absolutely ununderstandable condition which no imagination can depict, no categories can reach and possess. In so far as we do understand it the Q. R. cannot be regarded as a condition of *no* probability : it is a condition from which extrinsic limitations have been sought to be removed ; the Q. R. is the all-inclusive All ; but where extrinsic limitations have been removed intrinsic limitations may well remain. In the eye of logic it is a configuration, vast though it be ; and in human experience configuration appears to be inveterately

associated with change ; an absolutely changeless configuration is altogether foreign to our commonplace empirical logic. From these considerations, which could be only very meagrely given here, it would appear that $U_0$ and Q. R. should not be brought quite in a line with each other. There *is* a distinct falling off in absolute quiescence as we pass from the former to the latter, though the latter particularly involves the adjective 'quiescent' while the former is without it.

We have been much involved in these metaphysical side issues. We have brought them in as illustrations ; but we cannot let our principles be eclipsed by their imposing illustrations. It is only in the passage from $U_0$ to the other orders of universe that Probability is born. It is only then that we can ask questions like the following. Given a condition of experience, what probability is there of its continuing as it is ? A given condition of experience has disappeared, what probability is there of its turning up again ? Out of a number of fact-sections, which has the strongest probability of continuing ? Out of a group of fact-sections that have disappeared, which has the strongest probability of turning up again ? Probability necessarily implies a fall from the condition of absolute quiescence and absorption. From the degrees of curvature that we have already considered it will also appear that probability varies inversely as the quantity of the veil. In the dumb, alogical fact itself it is all quiescent assur-

ance and no probability. The mental fact is one degree removed from the Fact, and it possesses a low curvature of actuality-cum-possibility. If the degree of probability be measured by the element of certainty and repose involved in a case, we may say that mental life possesses the greatest probability : it is more certain and self-sufficient than any other aspect of the Fact. 'Certain' in what sense ? Organic life and material existence are progressively less assured planes. We have inverted the real order because we have inverted the standpoint of approaching and studying these planes. We look at the mind and life from the physical standpoint commonly ; hence matter seems to us to be criterion both of reality and quiescence; matter is the most certain and real thing for us. But from the proper standpoint, *viz.*, that of the fact itself, this appearance of certainty and reality in Matter is illusory, preposterous. The home of reality, the foundation of assurance, the basis of belief, are all in the Fact ; the more we veil it, the farther are we removed from this home, this foundation and this basis. Matter is the condition of maximum veiling, hence *really* we can accord to matter very little of reality and assurance. We must compare material with mental existence as regards these two characteristics not with the glasses of preconceived theories on, but in an essay of unsophisticated intuition. To such intuition Matter will surely appear as the condition of most ignorance and the place of the most complete

delusion. In mental life, a fact-section is precisely what it appears to be : a feeling exists for the mind precisely as it is felt : there is absolutely no difference between the appearance of a feeling and its reality—though of course there is all the difference between F and F′, between a feeling as it is *felt* and as it is *regarded* in thought. In the material world, on the other hand, there is commonly a wide and perhaps unbridgable gulf between what a thing appears to be and what it may really be yet the appearance is accepted as the reality. What I take as rest, is only apparent rest ; what I take as simple, is only apparently simple ; what I take as exact, is only approximate. What I take as green colour in an object is perhaps nothing of the sort at all—it is only a vast assemblage of particles vibrating and propagating waves in the luminiferous ether ; and so on. I rely on the testimony of the senses ; but this testimony will give me no pause and sure ground. I am dislodged from the world of my natural and unaided senses to be cast bewildered into the heart of a world which knows only particles and their motions, a world that would fully satisfy Dynamics and mathematicians, but a world robbed of all taste, smell, touch, sound and sight. *These* are merely our own sensations which have of course their proper stimuli in the *real* physical world, but these proper stimuli are only particles dancing according to the bidding of the mathematicians. Now is the world of particles even a safe lodging place?

May not a better and wiser science turn us out from this so-called *real* universe of ether and vibrating particles? Hence Matter is not what it appears to be: it is ever deceiving and eluding us. Feeling never deceives and eludes, though thought *about* feelings may. If a feeling is quiescent, it *is* so; there is no further question about it. If matter is quiescent, it is so only by appearance: we may question it and even may believe it as the reverse of fact. In the language of our science, feeling as feeling is a fact of P-emphasis: we take it without any reserve: we allow nothing to stand between it and ourselves at least for one moment. Matter is feeling in a certain aspect; but here we do not take it without considerable reservations, without drawing a veil between it and ourselves. While I have matter I fancy that I do not have it all or even as it is in itself; it is an entity outside of me and independent of me. This strangeness which matter wears for me is attributable to the veil: it is a condition of V-emphasis. Organic life which seems to be intermediate between feeling and matter is to me the condition of spontaneity, activity. We seem now-a-days to have outgrown the stage in which humanity is unable to conceive activity apart from life: we are quite at home with blind, physical stress. Nevertheless life is still to us the condition of existence which brings into prominence the aspect of M—it is a condition of M-emphasis. This last point will smoothly introduce us to a discussion about the relation between Fact and Motion.

## 13. *Fact and Motion.*

I have now launched upon a very large subject, but within my present limits I can only deal with it in a very summary manner. What is the fundamental idea in motion? Motion has been commonly regarded as a physical fact; I need not go into the psychology of this fact; but it is clear that motion presupposes both diversity and space, apart from the attending Subject whom we now completely ignore; there must also be a relatively fixed point of reference, pole or origin. There is no clear discrimination of course in the *feeling* of motion of these prerequisites: the elements surprise one another only in analytic thought. While I am witnessing the motion of a body I am generally innocent of a thought of these elements; but then there is no talk, no science, about the feeling of motion. To understand motion I must undergo an analytic operation. Besides those prerequisites, experience of motion stands for a special feeling-series in me, a series too which is chiefly physiologically generated. Let this æsthetic series be $\lambda$. Let the attending Subject be I, the relatively fixed point of reference be O, and space be S. In these we have of course enough elements of diversity. Then, the fundamental idea of Motion (M) can be represented by the following relation:

$$M = \int (S, O, I, \lambda).$$

where the sign of integration has been made to

represent the peculiar synthesis of experience: experience of motion is thought as the integral of the various aspects symbolically stated within the brackets. There is no mysticism about the equation given above; it professes to be nothing else than a simple statement of a very random psychological analysis. Yet it will presently appear that such a symbolical statement is not quite unprofitable. The above may fairly pass as a complete statement of motion. This we may call the *polar* equation of motion, since on the right-hand side we have stated the poles, aspects or elements which, we believe, are involved in a representative conceptien of motion

By supposition $\lambda$ stands for a certain æsthetic series; it is a series, which being translated into objective language, gives me *successively* different *positions*—hence involving both Time and Space. Space has been especially mentioned in the equation; Time which is presupposed by series as such, whether subjective or objective, has not. We cannot regard the feeling-series as equivalent to the successively different positions: what I totally feel when I am witnessing the gradual displacement of a body cannot be equated, as reflection will plainly show, to the phenomenon of displacement itself. The phenomenon of gradual displacement is merely a physical rendering of the total feeling. If the displacement is D and the total feeling-series be $\lambda$, we have evidently

$$\lambda = D + x.$$

This $x$ is an additional factor whose place and meaning in the total feeling-series ought to be clear to reflection. Let us put o of ignorance, for $x$. Then, $\lambda = D$. By ignorance, the feeling-series is made to represent an objective phenomenon, *viz.*, physical displacement. Evidently, the feeling-series may be taken in a narrow as well as in an extended sense. It may be made to swallow up the other factors of the equation of motion : the attending Subject, the point of reference, as well as Space and Time, are elements which cannot strictly be regarded as external to the total experience of motion. The feeling-series may also be taken to mean, as it has been taken to mean in the equation, the peculiar muscular and visual sensations which successively appear in us as we are following a moving body. This latter is only an aspect of the total experience. For the purpose of our investigation let us take $\lambda$ in this narrower sense. Put $I = 0$ of ignorance ; then we have an equation of motion which being translated back into the language of commonsense will mean this

Motion is a gradual displacement of a body in space regarded in reference to a relatively fixed point or condition. As a defiinition it will beg the whole question perhaps ; but I do not offer it as one.

Extensity of experience is a characteristic which is clear to intuition ; I directly feel the difference between a more extensive feeling and a less, a more massive consciousness and a less. Thi

massiveness of experience is a feeling which it will be impossible to reduce to simpler determinations. I have repeatedly represented my concrete world of experience as an unbounded continuum : is not this feeling of unbounded continuum an experience of massiveness or extensity ? This massiveness supplies a quantitative basis for our experience. It is clear also that the physical mass is only an aspect of this massiveness of experience. Physical mass is derived from fundamental massiveness by repeated ignorance. The concrete All becomes by ignorance the pragmatic fact—and a given physical mass is merely a pragmatic fact as will appear from a comparison of a physical mass with the entire experience which knows and sustains it.

This massiveness together with another fundamental circumstance of fact-life, *viz.*, ceaseless drift or flow, supply as I have suggested, the quantitative basis of Fact. Without these two Fact could not be known as a quantity at all. Of these two, drift presupposes extensity. A particle as represented by a mathematical point may drift and yet may not be an extended something ; but drifting is surely not possible without an extended something *wherein* to drift. Now, extensity of experience is the original, the concrete datum, of Space ; and drift or flow is the concrete original of Time—Time is an experience of ceaseless flux from which we abstract as far as possible the *matter* of the flux : to us it is the *form* in which something can be known as flowing, by which a stretch of experi-

ence is broken into a series : but is this *which* something external to the experience which is supposed to be treated by it ? Do we not rather abstract the form from the matter, with which it forms a concrete whole ? As time is an abstraction apart from drift, so space is an abstraction apart from extensity. The Cartesian characterisation of matter and thought as respectively extended and inextended substance is not after all so vital a difference as might appear. Thought may not be extended in a physical sense—it may not occupy space ; but it *is* a massive or *extensive* phenomenon nevertheless. Experience is always a condition of massive existence : even pure awareness we cannot but regard as a boundless plenum : differentiations we may possibly think away, but we cannot conceive a state of experience in which it is absolutely contracted into a point : even the analogy of the point cannot serve us, for the point though having no magnitude has a position still, and if it has a position, *where* is it placed ? It is mainly on the strength of this basis of fundamental massiveness of experience that we have ventured to regard our various types of experience—not excepting $U_0$—as universes : we can surely have no universes where we have no masses, spiritual or material.

The relation between Extensity and Space, Drift and Time need not be gone into more deeply in this volume : that would make our enquiry too psychological and too metaphysical even now. I confess, however, that I do not discover any funda-

mental difference between the one and the other. What I call the perception of space is really an experience of extensity : it is extensity appearing in a special form only. Comparing my continuum of experience at any moment and the perception of the physical universe I do not find any fundamental character which the one possesses and the other lacks : both appear to be essentially extended, though in somewhat different senses. From the concrete universe of experience in consciousness to the physical universe in space the transition is not violent at all. To this view our Theory of Fact lends all the countenance that it can command. Too long and too recklessly have we quarrelled over the opposition between Thought and Matter : they are but two sections obtained by ignorance from the concrete Fact : *this* is extended : Thought *and* Matter are extended.

As Fact-extensity is the basis and original of Space, so Fact-drift is the basis and original of Motion or physical displacement. We have with some fulness gone into the nature of Fact-drift. What I have previously called thought-oscillation is one of the most interesting cases of this drift. The general nature of the drift is, however, given by the ceaseless forward sweep of the continuum conditioned by a continuous but variable backward sweep. Oscillation may indeed be regarded as a special case of this. Now, how does the special case differ from the general and original—I mean, how does Physical Motion differ from Fact-drift ?

If we glance back at the equation of Motion given above we shall readily discover that in physical motion the factor $\lambda$ assumes a somewhat different value : physical motion involves either the intuition or the suggestion of a visual and muscular series. Does not Fact-drift also involve the intuition or the suggestion of a visual or muscular series? Suppose I am imagining a continuum of experience as continuously changing this continuum may be either an aspect of the physical universe, extended in Space and changing in Time ; or it may be an aspect of thought-universe spread in Extensity and changing in Time ; in the language of fashionable psychology the continuum may either be an objective or a subjective experience. That drift in an objective experience is motion involving a visual and muscular series is a proposition that requires hardly to be stated. But can we say that drift in a subjective experience also may imply this? I think I can answer it in the affirmative. 'The mind's eye' is not a mere Shakespearean figure of speech ; when we are imagining an extensive subjective experience as changing I have continually to adjust my 'inner eye' to appearing portions of the continuum : there is shifting distribution of imaginative and attentive effort. Now, I think every attentive effort, whether inwardly directed or outwardly, is normally attended in us with a muscular feeling ; also, every imaginative effort or introspective attempt is accompanied by a *quasi*-visual feeling.

Hence $\lambda$ is a factor that cannot be supposed to be absent altogether from the Fact-drift. Since Fact-drift is the general affair of which both subjective process and physical motion may be regarded as aspects, the factor just referred to should be given a general meaning. Muscular feeling and visual feeling are commonly taken in a physical sense, and we perhaps do well in so taking them. Attentive effort is a consciousness not only very analogous to muscular feeling but even normally inseparably connected with it : there is a prominent family affinity between muscular activity and attention, and there is commonly always a presumption of the former involved in the latter : to verify this last statement we must carefully look into what are known as the physiological conditions and expressions of attention. But suppose we are enabled to connect attention with muscular activity ; is there not still a sufficiently wide difference between the two to justfy us to set apart subjective process from physical motion ? That there *is* a material difference between these two aspects of Fact-drift is a proposition that can hardly be challenged ; but I am endeavouring to bridge over the gulf between them as far as possible. It is the mysterious veil which makes near facts appear distant, distant facts appear near, similar facts appear as different and different facts appear as similar. Fact-drift in general—that is to say the process of the continuum of experience—involves the consciousness of attentive *effort* and also a

feeling that I cannot more plainly describe than as the feeling of following a process with the 'mind's eye.' Now I submit that between this consciousness of attentive effort involved in general fact-operation and muscular activity involved in the special case of physical motion there is no radical distinction ; and also between the feeling of the mind's eye and that of the bodily eye there does not appear to me to exist any fundamental difference in so far at least as their psychological nature is taken.

I have run the risk of being taken to task for playing fast and loose with such fairly clean-cut conceptions as attention, muscular activity, introspection and visual perception. But as I have taken care to point out already the distinctions among these are real but not fundamental : attention and muscular activity may be regarded as different modes of the same kind of fact of experience, and so also introspection and visual perception. I was endeavouring to explain physical Motion as a special case of Fact Drift. An analytic expression for this latter will also involve the factor $\lambda$ ; now, in the case of physical Motion this factor assumes a different—but not fundamentally—value. Let Fact-Drift be denoted by the notation *FD*. Then, since Fact-Drift is simply the continuum of experience in movement *(ME)*, we may write down the following relation :

$$FD = ME.$$

Now, analytic thought will forthwith break up

*ME* into three such factors as Extensity ($e$), an attending and witnessing Subject (I) and also a certain determinant æsthetic series which particularly renders consciousness a consciousness of movement or flow. Without Extensity or massiveness experience cannot be imagined as moving or flowing; no movement of experience again can be *conceived* without planting a statical point of reference and judgment in the midst of the flux, *viz.*, a self-distinguishing subject which witnesses and renders possible the *thought* of change without itself changing: this, I cannot but concede, is a thoroughly solid rock in Green's metaphysics of knowledge. I must recognise, however, with James that the experience of drift *as such* need not presuppose anything of the kind: I need not require an unfailing and unchanging witness in me to change and to *feel* the change: but to *conceive* and imagine a process of change I have to bring in a factor which was not at all called for in simple feeling.

Thus employing the sign of integration in the sense of the present section, we have

$$ME = \int ( e, \mathrm{I}, \gamma )$$

This is an analytic account of the continuum of experience regarded as moving. First, put $e=0$ of ignorance, and then put it $= S$ or space. In plain language, let us substitute space for extensity, extension for massiveness: substitution clearly

implies (1) veiling, (2) movement and (3) presentation—implies VMP. Thus a special aspect is substituted for the general nature of experience, which means not that the general nature of experience can be suspended at any moment, but that it is ignored and regarded by us differently. We have got extension in the place of extensity. Let us next treat the second factor, I. First, put it = o of ignorance, and then = I, O. In the thought of physical Motion we undoubtedly require a relatively statical point of reference, more palpably concrete than the metaphysical self-distinguishing subject which was sufficient for the conception of a continuum in movement : either our own body or some other material object at comparative rest we take as our point of reference in conceiving physical displacement. But is the attending subject himself altogether in abeyance in the conception of motion? It is ordinarily very nearly ignored no doubt but not completely : hence in place of the bald metaphysical witness of the Drift we have a duality, *viz.*, an attending subject (I) and some other tangible point of reference (O). Lastly, the feeling-series which characterises a concious-ness of drift must be first ignored and then given a somewhat different value ($\gamma'$) in order that we may have physical Motion in place of Drift. I need not pause to explain a distinction which ought to be patent to reflection : the series which is necessary for the conception of experience-drift merely, will not suffice for a conception of displace-

ment in space. After performing these operations we have

$$FD = \int (S, I, O, \gamma')$$

= Physical Motion, an expression which agrees with that given at the outset of the present section.

We have now tried to connect Fact-Drift with Physical Motion. There is no essential difference between the two : the latter is only an aspect of the former. All Fact is *extensive* or massive : normally at least such is always the case. Fact is *extended* sometimes. The cloud of sense-perception is taken as an extended object ; the thought of the daffodil as it flashes upon the inward eye is taken as an extensive experience merely. I do not stumble upon any very fundamental difference between the two, however. Both are slightly different *aspects* of experience or Fact, and I am inclined to think that both are connected together by laws which are alike in all essential respects in both. For example, if Motion applies to the material particle it applies *also* to feeling and thought. Even these move and not simply change. This is apparently a very wild proposition and would require a word of explanation. A material particle P moves from one place A to another B in space S. Does a feeling exist in space ? Not in space exactly, but in an extensive continuum of experience of which Space is only an aspect. The continuum of experience includes Space ; it

includes everything; nothing is foreign to it. Just imagine your continuum of experience at any moment—your entire conscious existence, and see how Space appears to be related to it. We shudder at the thought of a feeling being extended: we are too completely possessed by the bogey of Cartesian philosophy. But in the fulness and clearness of intellectual perception a feeling *is* extended; a feeling is a section of the concrete Fact: this is normally always extensive, and extension is only an aspect of extensiveness. Such circuitous logic apart, let us seriously ask this: you say that patch of sombre cloud is extended while a placid reflection in your mind is not; but what is that extended patch of cloud? Is it not a feeling of your mind which you have objectified and localised? Now, this objectification and localisation cannot surely render your feeling something other than a feeling whatever your belief concerning it may be. Hence your patch of cloud is really equivalent to a feeling—it is only a pragmatic section of experience. What you call a placid reflection in your mind is also a feeling (I am using this term as meaning a section of experience) —a pragmatic section of experience. Hence the issue lies between one *section of experience* and another; if one is admittedly extended—experienced as such—what can we mean by saying that feelings must be *ipso facto* in-extended or nothing at all? Indeed the wall of partition between Thing and Thought has been in some

respects a most arbitrary and fantastic one : all differences exist among sections of experience, and none between experience and something which is absolutely other than experience : this latter is simply an utopian category.

I have already distinguished between vistas of experience and space. The former constitute what we have previously called Extensity or spiritual Extension. Space or objective extension is certainly not something external and foreign to this : it is only a pragmatic section. When I say I am feeling Space I am really feeling this spiritual Extension—the boundless continuum of experience: I ignore the real whole and fancy objective extension to be the fact for me : Space is born of ignorance. Now, let us answer the question that we have put to ourselves : Does a feeling exist in Space like a material particle P ? It exists in the unbounded spiritual extension of conscious life, in the normal universe of our experience. My whole world is contained securely in this Spiritual Extension : Matter and Space and Motion are in it : You and other acting and reacting Subjects are in it : this as we have seen does not reduce us to Solipsism, for the self is only a pragmatic section of Fact, so that you, I and all other subjects are but pragmatic Foci in a curve of infinite dimensions : we are all in *it* and not it in any of *us*. Now, every feeling represents a condition of stress in this shoreless sea of experience : every pragmatic fact-section is a condition of disturbance in the Fact. The

material particle in motion is a fact-section in regard to the objective continuum or Space : hence the moving particle represents a condition of stress in Space. Again, we can have no insular disturbance in the Fact, a disturbance completely exhausted in one part only. Every disturbance is propagated in the boundless spiritual Space, and this propagation surely implies the transference of a pragmatic section of experience from one position of the continuum to another. The transference however need not be taken to mean the actual translation of a part from one position to another : as in the propagation of an wave so in this the continuum is merely thrown into similar states of stress in different positions in successive moments. Thus the unbounded spiritual Space in which you, I and all of us exist may be thrown into states of stress in different positions simultaneously or successively. When you and I both see an orange and are similarly affected by it, we have, in the language of our theory, two different centres of a co-essential spiritual continuum taking nearly similar conditions of stress at the same time. At least such a conception is more in keeping with radical empiricism than the view which would describe the affair as a transaction between two similarly constituted and disposed Subjects on the one hand and an external agency in space on the other. This view does not make it clear *where* the Subjects stand and in what relation the external agency in Space stands to them. The phenomenon

of action and reaction is ever a mysterious transaction, howsoever we may conceive the relations of you and me and the world. But surely nothing is gained by mystifying the issue still further. I prefer to take you and me and the world in the universe of Fact, and explain by the way the co-presentation of an orange in you and me as a case of similar or nearly similar conditions of stress arising in the same boundless tissue of Fact. We all live, move and have our beings in a co-essential spiritual stuff: even Matter and Motion cannot really be so alien as we commonly take them to be.

Now, not only can two similar conditions of stress be induced in two different places or centres in this co-essential spiritual stuff, but a condition in one place or centre may be conducted or transferred to another place or centre in the stuff. This does not mean, as already hinted before, the actual transference of a pragmatic section from one position to another in the continuum: it means that two or more different positions of the continuum are thrown into similar conditions of stress in successive moments. In the language of commonsense what disappears in a place of the continuum now reappears—with certain limitations of exact resemblance of course—in a future time. It means also, and I draw prominent attention to this, that a condition of stress that has appeared in me (A-centre) now will have a tendency to be transferred to you (B-centre): no disturbance I

can keep absolutely confined to myself or a given centre in the continuum : it has always a tendency to go over to other centres. The co-essential stuff plays the part which Faraday's dielectric medium plays between two centres of electric disturbance : indeed the dielectric medium, ether and so on, is only an abstract segment of the spiritual stuff, and electric disturbance is only an abstract aspect of fact-disturbance. The above of course supplies a basis for Thought-transference, Hypnotic Suggestion, and so forth, which are steadily gaining ground even in the Western world in spite of the waves of scepticism and discredit which have occasionally swept past them. Thought-transference, however, does not mean that a thought in my mind actually passes over to your mind : but that a condition of stress which *represents* a given thought in me is propagated to you through a spiritual medium in which both you and I live, feel and think. The condition of stress represents but is not equivalent to the thought in you and me, as the condition of stress which causes two similar complete waves in a fluid may be the same, the same energy being transferred from the first to the second, and yet the two waves are different inasmuch as the vibrating particles which produce the first are not those which produce the second. Thus we can save the face of the subjectivity of a feeling : feeling is subjective in one form and objective in another. Feeling is subjective in so far as I feel it and no body else

can feel what I feel : the particles of the continuum of Fact (I should not however be taken to declare for mind-dust in using this convenient figure of speech) which vibrate in me do not leave their mean positions absolutely and go over to any other subject. Feeling is objective in so far as the condition of stress which causes it in me may pass on to you through the unfailing medium of an all-embracing Over-Soul, and produce in you a feeling more or less akin to mine. The hard and fast demarkation that feeling is subjective and thing objective is after all only a myth : thing is objective as well as subjective, and feeling is subjective as well as objective · both are pragmatic aspects of the fact of experience. The subject is too large and too engrossing to be dealt with in a cursory manner : the theory of the relation between Fact and Motion outlined above will however be found to be, in future volumes, one of the main planks not only of the Doctrine of Mysticism but of such a commonplace problem of science as Perception. To my thinking, no intelligible and consistent account of Perception can be given without postulating the Spiritual Stuff in which all subjects and objects live, and the propagation of a condition of stress from one centre to another in the Stuff. After we have definitely identified Fact with Experience we cannot afford to be frightened by the consequences of our own proposition.

It should be further observed in passing that

Newton's Laws of Motion upon which the whole science of Dynamics and Dynamical Physics rests are not altogether foreign to the life of the concrete Fact. The First Law states that every body perseveres in its state of rest or of moving uniformly in a straight line, except in so far as it is made to change that state by external forces. This Law enables us to ascertain where there are no external forces acting on a body. Here we have really the foundations of Fact-persistence exposed to view: Fact persists in its own state—such is its innate tendency. Persistence in a given state is the essence of Fact, the ceaseless flux is only an accident. $U_0$ and the Quiescent Real *do* persist in their given states ; my concrete universe at any moment is perpetually giving way. Yet even in the latter we cannot deny the tendency to persistence any more than we can deny the tendency to persistence of a material system which is yielding to the influences of external agencies : remove these influences and the system will continue to go on precisely in the state, whether of rest or of motion, in which it has been left by the influences withdrawn, unless and until it is acted upon again by external agencies. The material system cannot change without being disturbed : this is its inertia in one aspect and its spontaneity in another. It cannot change but can and does persist : if to *become* is an activity, to continue to *be* is also one. This virtue of persistence is not peculiar to the material system but is of the essence of Fact itself

out of which matter is carved by abstraction or limitation of the data. In $U_0$ and Q. R., as already hinted, we have this tendency to persistence of the Fact unopposed : these do persist in their states and cannot change, and the reason is fundamentally the same as in the case of the material system left to itself. In the case of those two orders one can conceive no *external* influences, for nothing can be imagined to be external to awareness as such and to a universe in which all is quiescently actual and nothing is *possible.* This indeed is not a dynamical explanation of a metaphysical truth : the persistence of Matter in its own state is simply an illustration of the persistence of Fact.

The two orders referred to above cannot change because we cannot imagine any external influences operating on them ; but what about our own concrete universe of Fact at any moment ? This surely is an infinite fact—all-inclusive—yet it is known as perpetually changing: have we not ourselves conceived our universe as in a state of ceaseless flux ? What *external* forces can possibly make it change ? In the first place, we do commonly oppose our universe to a vaster universe, our actual to the possible ; the actual includes all, but is believed to be limited by the possible: this is how it is distinguished from the Q. R. The infinitude of my actual fact at any moment is thus relative and not absolute: one category is still limited by another, being by becoming, actual by the possible.

Hence we can conceive external causes inducing changes in the given state of our continuum of experience. In the second place, the conception of flux which we have applied to the continuum of fact does not apply to it in its concrete entireness; this is absolutely alogical and uncommunicating: we cannot certainly say that Fact changes. Change is an idea which we apply to the sum of fact-sections, the aggregate of features that we can discriminate in the continuum. More commonly also we know and think our pragmatic fact-sections as changing. In either case, what we attribute change to is a magnitude sensibly short of the infinite ocean of awareness in which fact-sections rise, toss and die away like waves. The extent of the sum of fact-sections is limited by, overlapped by the extent of my concrete existence. Hence external influences can be imagined as operating in regard to this sum. I have put the case in an argumentative form, but surely it cannot be set at rest without making an appeal to reflection. Change is always applicable to a sectional object—it must be conceived in reference to something, whether it be $U_0$, or Q. R., or the Self-distinguishing Subject of Green, which does *not* change: an absolutely all-pervading existence opposing itself to nothing can be lived and felt undoubtedly, but it cannot be known and conceived as changing. How it is lived and felt is inconceivable and unspeakable.

Without yet venturing into obscurer metaphysic[s] let us give a moment's thought to Newton's second

Law of Motion. Change of motion (that is to say, momentum) is proportional to the impressed force (that is to say, impulse), and takes place in the direction in which the force is impressed. This gives us a measure and direction of the change after a body has been acted upon by external forces. This also is a special application of the general law which governs fact-operations, *viz.*, Every fact-operation is adequate to the cause which produces it, and is produced in the direction of the cause. 'Adequate' is of course a vaguer substitute for 'proportional', but the underlying sense need not be laid bare. 'Direction' means 'in the line and nature of' the cause. Change is adequate to the cause and is produced in its line : change cannot be away from or contrary to the cause. This belief regarding fact-operations is the prototype and basis of the belief which is formulated by the Second Law.

The Third Law tells us that action in the material system is always in the nature of a Stress. Reaction is always equal and opposite to action, that is to say, the actions of two bodies upon each other are always equal and in opposite directions. Action and Re-action are the partial aspects of a Stress, and these two aspects have been related by the third Law. That all force is of the nature of stress—such as the tension of a rope and the pressure of two bodies against each other—is also a proposition that touches the foundations of the Fact. All physical theories—whether relying upon

action at a distance or upon impalpable intervening substances—constitute on the whole a Philosophy of Stress in its material aspect. In the preceding sections we have developed, somewhat hastily, a Philosophy of Stress in the concrete aspect, or in relation to the Fact. All operation in the continuum of Fact is in the nature of stress, involving action and reaction, and I even make bold to suggest that these two aspects are equal and opposite in the Fact also. Herein is contained the germ of the Hindu doctrine of Karma which I propose to examine in a future volume. I may also note in passing that the primordial agitation in consciousness is the primordial stress which has set lessons to all the stresses in science: it is closely akin to Schopenhauer's Will, though essentially it is a stress *in* consciousness and not a mere universal blind impulse which has swelled into consciousness in you and me. Of the nature of the stress I have been content to say nothing more in the present essay than that it is the Triad PMV.

Newton's three laws bring out to my mind these three aspects of the stress respectively. The first law which will have a body left to itself continue in its own state brings out prominently the aspect of Presentation. Indeed, we have already adverted to the peculiarly close connexion between Persistence and Presentation. If left to itself, a body will continue to remain as it is presented; and conversely, so long as a body continues to remain as it has been presented, it is left to

itself. The first law assigns therefore when a thing is simply presented without being made to change. The second law assigns when and how a thing is made to change from a given condition of presentation. This therefore peculiarly involves the Principle of Movement. Lastly, the third law which tells us that every force, or for the matter of that, every action is in the nature of stress, brings out to my mind the aspect of veiling. Action is really more concrete and complex than we commonly take it to be: when we know that A is acting on B, we commonly forget or ignore that B is reacting on A with a force equal and opposite to that of A. Action, whether spiritual or material, is thus always a double-sided or rather many-sided affair: in its concreteness it is a phenomenon of infinite and inextricable complexity: even physical and mathematical analysis simplifies matters by abstraction or limitation of the data: even such great masters of analysis as Laplace, Lagrange and Gauss would find their work impossible without first drawing a veil round about them to shut out the infinite and inscrutable. Hence the third law appears to me to emphasise the aspect of V.

But cannot a Fact change except in so far as it is acted upon by external forces? Cannot a Fact change spontaneously? We have previously suggested that Fact possesses the nature of Matter as well as of Life, and it has been commonly thought that the essence of the latter is in spontaneity;

now, if Fact possesses also the nature of Life, we cannot think of a rigorous application of Newton's First Law to the Fact. That this law is not altogether foreign to the constitution of fact in general we have ourselves been somewhat anxious to maintain; but does not fact also exceed the physical bounds of this law? This indeed is one of the deepest and crucial questions of philosophy: upon its solution hangs the fate of such momentous problems as creation, free-will and necessity, and so on. Within our present limits we can bestow on it only a passing notice however. For every change in a given portion of matter we must presuppose an adequate impulse or '*impressed* force': this seems to be the natural law prevailing in the universe of atoms, their configurations and displacements: but shall we part with this law in mounting up into the realms of Life and Spirit? Mechanical explanations of the phenomena of life are not quite rare and unpromising; the actions of a vital tissue might possibly be explained adequately in terms of molecules, their configurations, disposable energy and the actions of stimuli, as the action of a Newton's 'machine,' can be with the aid of his three laws and dynamics based thereupon; perhaps spontaneity in the living cell may be dispelled one day leaving our mechanical account of life all complete. But we have admitted 'disposable energy' as one of our terms; does this correspond to the 'potential energy' of physics, which term was naturalised by Professor Rankine,

and which means the energy which a material system possesses in virtue of its configuration only, and by which it can do work in passing from the given configuration into another. Let us assume that Spencer's disposable energy in the vital tissue roughly corresponds to this ; can we now say that the tissue can be spontaneously active? That the tissue can act absolutely in the absence of all external stimuli is a position that is not only hard but impossible to establish ; Life like Matter can never be left completely to itself ; now, if Life is always exposed more or less to the influences of its environment, how shall we *prove* that a given action of a living tissue is *really* spontaneous and not a reaction provoked by the separate or accumulated actions of its environment? It may be difficult to connect a particular reaction of the organism with a particular action of its environment at any time ; the organism may also *appear* to act absolutely, or of its own accord. But the default of a ready explanation in the first case and the appearance of absolute action in the second, do not prove spontaneity. That the reaction of the tissue to the action of the stimulus does not seem to be quantitatively adequate, that great stimuli sometimes produce but slight effects and small stimuli invoke tremendous responses, is a fact that need not conflict with the mechanical account of life. We must remember that even in physics we have commonly to reckon with potential energy between the two sensible aspects of the

transaction : the application of a spark to a quantity of dry gun-powder is followed by a thundering explosion : how much disproportionate the reaction appears to the action ! What the spark has done is the throwing of the molecules of the gun-powder from a given configuration into another, and by this passage the powder does mighty work with the potential energy contained in the given configuration : the impressed force has roused from slumber a vast quantity of molecular force, is added on to it, and the effect that is produced is just adequate to the total force behind it. Can we not explain the apparently spontaneous, self-initiated and disproportionate actions of the living tissue on similar lines by requisitioning and drawing upon the disposable energies of the centres ? Every current that finds its way into the brain at length finds a way out ; can we not say conversely that every current that finds a way out of the brain must have first found a way into it ?

We are being gradually allured into the thick of the discussion ; but let us rather be on our guard and content to note that in spite of the appalling complexity of the data mechanical explanation of life is not altogether an absurd business. The disposable energy is the obscurer counterpart of potential energy ; the latter has ordinarily its exact mechanical equivalent. The potential energy also involves an element of mystery : energy is due either to motion or to

configuration : the former is kinetic and the latter is potential energy ; but we are not a whit enlightened by it : *how* can a given configuration (apart from even molecular motion such as heat) contain energy ? Energy is known and measured by the work it does ; how can a state of matter which can be represented by a configuration merely —a state of no *work* – contain the possibility, basis and motive of work ? Now, however strongly I might have put the case for vital mechanism, I venture to think that spontaneity lurks in the midst of the exactest mechanism which dynamical physics has been proud to glorify. Even Matter is spontaneous not merely in the sense that it resists and tends to persist in its own given state, but also in the sense that it tends to change and even to select. I thus vote for certain types of Modern Pluralism, but I bring down the wrath of the mighty physicist on my poor theory. Matter is larger than what can be recognised by the physicist : he has abstracted. The potential energy which does not reside in visible or invisible motion of matter but is contained mysteriously in the configuration of particles is larger and more mysterious than he has thought. He can ordinarily take note of, measure and compare only a *part* of the total energy of configuration : he has veiled the whole and accepted only a fragment. He can possess an equation of energy only by a limitation of the data. The stone and the earth removed from each other possess a potential energy, due to a particular

configuration, which can be measured by taking into account the work expended in lifting the stone from the earth and also the work done in bringing it back to the earth. But are we sure that the total energy of configuration is precisely what we have shown in this equation? The electro-magnetic energies have been left out of account by pardonable simplification; and are we really able to say that we may possess a complete catalogue of the energies of configuration of a given material system? If the constitutional dynamical stock of matter is larger than what we may ever be able to exhibit in our physical equations, how can we be sure that a given portion of matter reacts only in so far as it is acted upon by external forces, that its change of position or configuration is *not* due to an impulse acting from within, an impulse which remains over as a residuum after we have subtracted what ordinarily passes as the potential energy of a material system? This balance of inner impulse, which we ignore in the abstract treatment of dynamical physics, may constitute the Spontaneity of Matter. Hence Newton's First Law is approximately rather than absolutely correct as a theory of Matter. If the total disposable energy inhering in the constitution of a given portion of matter be E, and the total potential energy that can be ordinarily computed in our physical equations regarding it be V, and spontaneity be S, then this last may be defined as

$$E - V = S.$$

The question is a difficult one and cannot be settled off-hand either by *à priori* reasoning or empirical. Is matter ever known to be eccentric in its conduct? Can we not always expect to explain a given behaviour of matter fully and adequately as a dynamical resultant? It is difficult to meet questions like these and satisfy them. I have ventured to think that what we commonly propose to study as a given behaviour of matter is an abstraction of its *actual* behaviour, and that therefore in its dynamical account we ignore a component factor, *viz.*, what we have just put down as S. If the magnitude and direction were known accurately a full dynamical account of the phenomenon could in all cases be given, however.

I have purposely refrained from going into the deeper foundations of the problem. I shall here make a few categorical statements, however. Matter is an aspect of fact; and as fact is spontaneous, selective, Matter cannot afford to be so absolutely bound and determined, so utterly a sport of external forces, as we commonly take it to be. A certain residual energy resides in Matter after we have sought to explain its conduct by the factors of external impulse, kinetic energy and energy of configuration; this residual energy explains the eccentricities, aberrations of its *actual* conduct. Theoretically, this stock of constitutional energy of matter is unlimited: it is a startling proposition (one that would provoke the op-

position of some types of Modern Pluralism, though perhaps it would accord with the pluralism of Leibnitz) that the whole universe really lives in a particle, that the infinitesimal is only the infinite taken with a change of sign, so that what appears as *vis viva* in the universe inheres in the particle as constitutional energy. Practically however, it is enough if the constitutional energy of a system is larger than what is known and calculated as potential energy. Fact which is unbounded, having therefore nothing external to it, appears to move or change : we cannot say of course that it moves or changes exactly, but what it does cannot be otherwise *thought and described* than as moving or changing. Now, if it changes not by the operation of any external impulse, it must change by inherent impulse or spontaneously! I *believe* that my fact is limited by a co-efficient of possibilities, but this does not prove that there is actually something external to my fact at any moment : the co-efficient is internal and not external to the fact, though in belief it is projected out of the fact and conceived as conditioning or fulfilling it from outside. In the present section I have stretched Newton's first Law to cover the fact by pointing out how we believe that there is something external to it. But my meaning is clear. Of $U_0$ or pure consciousness we cannot say properly that it is either absolutely determined or absolutely spontaneous : movement by pure external impulse or pure internal is utterly

inconceivable in relation to it : it cannot be conceived as moving : nothing external to it and no impulse connected with it can be conceived. Spontaneity is bound up with Stress, and can have therefore no place in an order of existence in which no stress exists. Stress has been vaguely connected with Will in this essay ; hence spontaneity is the essence and manifestation of Will ; hence also, if my analysis of Matter is correct, even Matter wills. Between Spontaneity and Martineau's Will there is a difference no doubt, but the former is wider than the latter and need not exclude it.

Stress is a condition of experience which involves polarity and PMV. Indeed PMV and their mutual dependence give the essence of Stress in the life of the fact. By necessary applications of the Principle of Veiling we have what are called Aspects of Stress. The aspects of physical stress such as tension, pressure, and so on are commonplaces, but in this fundamental science we must note—we have hardly any room here to discuss—the three natural aspects of Stress : P-Stress, M-Stress, V-Stress. We have characterised the aspects according to the peculiar emphases in them. A story of the Stress in fact we have outlined in the foregoing sections, but the metaphysics of the Stress I reserve for future treatment. A more systematic treatment of the connexion between our theory of Stress and the principal dynamical theories of Matter and

Motion will also be attempted in the continuation of the Series.

In $U_0$ there is no stress ; in the Q. R. with its infinite richness all displayed we may *suppose* that there is no stress either, though this latter case is not quite as undisputed as the former. All ordinary experiences involve stress. Can there be stress, for example, in E*a* or an experience accentuated at a feature *a*? Yes; accentuation means heightening of the potential of a point in the continuum. 'Potential' is the tendency of a condition of experience to revert to the level of absolute quiescence $E^0$ or at least Q. R. Compare this idea with what has been given of 'psychic potential' (fact-potential would be a correcter expression) in the opening sections of this essay. The potential of $E^0$ is zero, and that of Q. R. may be either zero or infinite. A condition of experience in stress is continuously tending to a condition of experience in quiescence; this tendency is a variable and is function of the distance (as apprehended ordinarily by intuition) of a given condition of experience from the condition of $E^0$ or Q. R. Without sallying into psychology I may say at once, as I have said herebefore, that P, next to pure consciousness, is particularly connected with quiescence and persistence, so that we may have orders of fact-potential according to orders of presentative emphasis in experience. For example, perception, memory, ideation, imagination will be successively ascending orders of

potential. Now, since Stress varies directly as Potential we may say that these classes of phenomena are in ascending orders of Stress. We have already discussed the peculiar quiescence of perception as compared with the stress of idea, and also the compromise of quiescence in a complex in which impressions rub shoulders with ideas. I promised to revert to the question in the sequel, but I am not able to redeem my promise in the present essay. Before closing this section I should invite attention to the conception of 'conservative system' in dynamics. "When the nature of a material system is such that if, after the system has undergone any series of changes, it is brought back in any manner to its original state, the whole work done by external agents on the system is equal to the whole work done by the system in overcoming external forces, the system is called a Conservative System." This is Clerk Maxwell; I might also quote Thompson and Tait. Now, what is this *going back* to the original state? Is this not connected with the fundamental idea of fact-potential? The answer ought to be an important one, yet I will not pause for it.

### 14. *Fact and Mathematics.*

The general connexion of fact with Number and Magnitude is a topic too metaphysical for the ends of the present essay. It is abundantly clear from the conception of fact, however, that

Number does not pertain to the concrete fact. Even a fact that especially relates to a thought of number is not a numerical fact itself. We cannot even say that a concrete fact is one : the indescribable unity-in-variety that we have attributed to it is after all only our thought and description of the concrete fact. When I am having a fact and noting its numerical nature, I have generally an oscillatory stress between the alogical fact innocent of number and the logical fact which, though itself being also alogical in its concreteness, involves a thought of number. A 'numerical fact' is felt no doubt ; and what is felt in it may be the basis of, but not equivalent to, a thought of number.

Number is born in the cycle PMV as applied to the fact. Suppose we have a given stretch of experience : by the operation of veiling as explained before this given stretch must be first resolved into a configuration or a series before the category of number may bear upon it. So long as it is an unbounded stretch merely, it can be thought of neither as one or as a manifold. To reckon a particular part of a continuum as one and a particular other as two, and so on, pragmatic fact-sections must arise in place of the concrete fact—not displacing it altogether which is impossible but eclipsing it——, and each such fact-section must be taken note of successively. Try for example to count the fruits of a plant as it has been totally presented in experience, or the

ticks of a clock upon the wall. Surely the veil is prominent in the birth of Number. Since PMV is the statement of the Fact-Stress, we may say that Number is born in Stress. To clear reflection, there are degrees of the applicability of the category of Number to Fact. If we start with bare consciousness as such and mount up to the reviewing fact, we find that the category is not uniformly applicable or inapplicable throughout. At the starting point or $U_0$ the category is absolutely inapplicable—pure awareness is neither one nor many ; Q. R. is a sort of manifold to our imagination, but since it is *quiescently* actual it must be, as we think, an experience lost in the infinite wealth of its features, and not allowing a review of itself as infinite : it is complacently and alogically infinite. In our own concrete fact there is no doubt an intuitive discrimination of features, but *such* discrimination is hardly enough for a thought of number. Number fully appears in F′ or reviewing fact. Accordingly, we might almost speak of a *Number-curve.* Unity is born upon a single application of the veil to the Fact. This would be circular metaphysical definition, but it may be inexceptionable as a precise statement of the form. More properly we might say that we come to think of a fact as one after there has been *a* complete revolution of the cycle P. M. V. in relation to it : a presented fact is *veiled*, and *moves* to *represent* itself or a section of it as one. For the representation of a fact as two, or two fact-sections in a fact,

two such revolutions of the cyclic operation will be needed. I appeal to reflection.

Many in relation to the Fact is born from a plural repetition of the cyclic operation. The case in which I seem to apprehend at a glance the manifoldness of the starry heavens for example, is only an apparent exception to the principle. In the first place, the rotations of the cyclic operation may be more swift than we may ordinarily care to think : a fact may have been several times presented, veiled and represented without our suspecting anything of the kind. Take for example the oscillation of regard in a normal kind of perception. The rotations of the cycle need not be sub-conscious, however. Pragmatic consciousness has been very commonly mistaken for actual consciousness, and this is mainly responsible for the philosophy of the unconscious. In the second place, where we do apprehend the many in a twinkle of the eye—though as I have just pointed out the case is not altogether free from doubt—our perception of manifold is an *acquired* perception and not an original one : the conception of many having been obtained originally by *repeated* veiling and unveiling comes to inhere in us as an empirical disposition, and when a *basis* for a configuration or a series has been presented in experience, as in the example of starry heavens, the idea of many is supplied forthwith as a superstructure. Looking at the heavens I know it as a configuration : this does not mean that a thought of

configuration comes from a single operation of the veil always as apparently in this case, but because a thought of configuration developed originally by repeated operations of the veil has become a permanent possession of the mind—a sort of readily available category—which has simply been brought to bear upon an adequate basis that has been actually given—*viz.*, the intuitively discriminated features of the heavens. If we represent the cyclic operation by $\phi$ ($\lambda$), then, Many $= n\ \phi$ ($\lambda$). In the case of the starry heavens where we appear to read the whole picture in a twinkle, $n$ is what I call, in the light of the foregoing explanation, a *potential* number, that is to say, a number gathered from previous experiences.

Infinity will not surely require infinite rotations of the cycle. It is born in quite another way. It arises from an ignorance of the pragmatic features of the Fact at any moment and an unreserved acceptance of the dimensions of the concrete. The finite pragmatic is born from a reverse operation. This again is no definition or explanation of the infinite. I make haste to admit that there is perhaps no real explanation of such categories as unity, plurality, infinity, and so on. It should be further observed that infinity is not a mere negative conception obtained by thinking away the limits of the finite. From our theory of Fact it is clear that the reviewing fact, if not too narrowly pragmatic, knows a fact as an infinite-finite-complex—as $I_1^f$, so that both the categories are obtained by

abstraction or veiling of the concrete. Of infinite we have already distinguished two varieties: An infinite which admits of direction and rival categories; as an infinite line in the positive direction and an infinite line in the negative; Space is infinite *and* so is also Time. An infinitude which does not admit of direction and is not limited by rival infinities may be distinguished as absolute. Fact including the co-efficient of possibilities, conceived as opposed or limited by nothing whatever, may be regarded as absolute infinity. It is also an engaging question as to whether we may not have *orders* of infinity analogous to those of infinitesimal.

When the values of two quantities A and B are made to approach each other so closely that ultimately their difference becomes smaller than any assigned value however small, their difference may be regarded as an infinitesimal. Smallness presupposes considerable pragmatic accentuation of the continuum of experience which is normally not only extensive but unbounded: this extensive experience must be accentuated at a tract with marked concentration in order that this tract may be regarded as small: the greater the concentration of emphasis of regard the greater is the contraction or smallness of the section apprehended: a point in a continuum is the position of greatest concentration of emphasis: the whole mental stress has to be focussed as it were in order that one may have an apprehension or a thought of a point. Abandon-

ment to the concrete fact as a whole means a more or less uniform distribution of the stress over the continuum. The orders of smallness will roughly correspond to the orders of the concentration of the stress. Infinitesimal implies the maximum presentation of a part and minimum presentation or maximum ignorance of the whole. Leibnitz' principles of Infinitesimal quantities lie at the foundations of Calculus, but I have no space to go into them in the present essay.

Continuity, again, is a topic which is supremely important in mathematics, but to the treatment of this I have no room to devote either in the present volume. This has received some measure of attention in the foregoing sections, however. Absolute continuity, or continuity of experience *as such* can never be conceived as broken by discontinuities : it is independent of the *kind* of stress that may be operating in experience in a given period : we have no gap in experience, though kinds of experience are continuously rising and subsiding. The other kind of continuity relates to the *kind* of stress which determines the nature of experience at a given time, and is a function of this stress. The kind of stress is settled partly by the intuitive nature of the continuum and partly by pragmatic operations upon it : the continuum is ceaselessly changing, it is also displayed as a variety of features : now, what changes, though different, and what features, though different too, will be regarded by me as constituting the *same kind* of stress ? While I am

writing this essay I feel that I have the same kind of stress and that also my experience is continuous, though surely the pulses which make up my present series or the features which compose my configuration of the moment are various. This indeed is the psychology of classification upon which I need not dwell. If from the writing of this essay I turn to the eating of my breakfast I feel that one kind of stress has been substituted for another and that my experience has been discontinuous. Suppose $\alpha$ and $\beta$ are the conditions which determine the kind of stress (S) which operates in me at any time ($t$), then continuity (C) of experience may obviously be represented as follows :

$$Ct=\phi\{f(\alpha, \beta)\}.$$

Suppose now that $Ct-Ct'=\phi\{f(\alpha, \beta)\}-\phi\{f(\alpha', \beta')\}$ $=0$ of ignorance. What will be the meaning of this equation ? It is this : If for two periods, $t$ and $t'$, two sets of slightly differing conditions, $(\alpha, \beta)$ and $(\alpha', \beta')$, have caused in my experience two states of stress differing from each other so slightly that their difference may be neglected pragmatically (this is the meaning of zero), then the difference between the two continuities or stretches may also be neglected, and the two regarded as practically constituting the *same* continuity. This I propose to call the fundamental equation of continuity. The above equation can be easily extended to a conception of Universal Continuity..

The conception of Limits I have freely used

in my previous investigations. I have also casually distinguished between two fundamental kinds of Limits, *viz.*, the Limit of evanescence (zero), and the Limit of Excrescence (infinity). Zero or evanescence should be taken to mean in the Science of Fact *ignorance* or veiling; hence this conception is elastic and will clearly admit of degrees of variability. Absolute nothingness is a notion that we have characterised as chimerical: consciousness of existence as such is the irreducible minimum of experience. Nothingness is therefore only pragmatic or relative nothingness. If a given thing is $E\phi(x)$, where E represents the inalienable datum of experience, then $E\phi(x)=0$ really means that the inalienable datum has been ignored, and also that we have $\phi(y)$ in place of the original function, and finally that $\phi(x)-\phi(y)=$ pragmatically considerable. Take for example the dissolution of a crystal in a liquid. The crystal has vanished when it has completely dissolved. But the permanent basis of experience as such (E) which supports the crystal, the solution and all thing, cannot vanish. The assemblage of conditions, again, which made the crystal cannot be supposed to have vanished completely either—the same mass and the same molecules have passed from one configuration to another. But this change from $x$ to $y$ happens to be considerable for pragmatic judgment: even while the crystal endures it is continuously changing: $x$ is turning into $x'$, and so on: but $\phi(x)-\phi(x')=0$ for pragmatic judgment, and therefore the crystal is

regarded as not changing at all: it continues, persists. Compare this last equation with the fundamental equation of continuity. In the mathematical notion of evanescence the place of the principle of ignorance is conspicuous. Q. R. and $E^0$ are two limits of our ordinary concrete fact: the former is the limit of perfection or fulness in which the fact becomes infinitely and exhaustively actual being limited by no co-efficient of possibilities: it is the limit of *relational* fulness; the latter is the limit of the reduction of all features and determinations in the universe of fact: it is like the reduction of the universe to the primordial stuff: it is the limit of *relational* zero. Limit in mathematics means the extremity (I really apologise for this circle in definition) of a progressive conception either in the direction of infinity or in the direction of infinitesimal in regard to a variable quantity. Give a wider and more concrete meaning to 'quantity' and this definition of Limit will apply to the fact, as indeed we have previously seen.

Addition in regard to the fact is the bringing together in *thought* of two or more fact-sections. It is thus that the fact assumes the aspect of a configuration. In intuition also there is a sort of plurality in the continuum, but it is not a plurality thought as such. Hence addition has no place in the intuitive complex or fact-stuff. When two fact-sections are added together, the *order* as well as the *values* of the fact-sections go to determine the result. This is the nature of *concrete* addition.

Addition in vector-analysis retains to a certain extent this nature. Ordinary mathematical operations are based upon an abstraction of the process. Again, in vector-analysis the result of the operation is what Mill has called a homogeneous effect of the components—it admits of a rigid numerical analysis ; in the life of the fact in general the result of the operation is *apparently* what Mill has called a heteropathic effect of the components—commonly it does not admit of a rigid numerical analysis and representation. A fact-section, whether physical or mental, has to be dexterously chiselled to a very considerable extent before it can be expected to take precise mathematical outlines ; thus fact-sections have to be pared down by limitation of data or elimination of complexities before their syntheses can be expressed as strictly homogeneous effects : this has to be done even in the physics of configurations and displacements. Suppose we express a homogeneous function as $Hf$ and a heterogeneous function, which by limitation of data can be resolved into a homogeneous function, as $(H+h)f$ ; suppose also that the position of a fact-section is $p$ and its value is $V$. Then, obviously, the addition of fact-sections

$$=(H+h)f(p, v) \ldots\ldots (1).$$

Position may be either in the temporal scheme or in the configuration scheme. Value may include both quality and quantity. Now, put $h=0$ in the above equation ; we have,

$$\text{Vector-addition} = Hf(p, v) \ldots\ldots (2).$$

Next, put $p=0$ of ignorance ; thus the addition of statical numbers and magnitudes

$$=Hf(v)......(3).$$

Further, if $q$ and $q'$ stand respectively for the qualitative and the quantitative aspects of $v$, it is clear that the former has been ignored or neglected in the latter two equations. This indicates in a very cursory way the connection of fact-addition to mathematical. The conceptions of Equation and Function will require here a word of explanation each.

Equation of fact is the representation of certain elements of fact being equivalent *in some manner* to certain other elements : the notion of equality is fundamental and therefore appears in the definition itself. For example, the mutual attraction between two material bodies is expressed as a function of the variables—their distance and their masses. This presupposes (1) a resolution of the fact-stuff which includes all into certain fact-sections, *viz.* two material bodies, their masses, distance, stress ; (2) a fashioning of the crude elements obtained by empirical analysis into forms neat and proper for dynamics : herein is also involved a limitation of the data. The actual complexity in the life of the fact is so formidable that fact-segments can be put into rigid moulds of mathematical operations only by violence : much of the complexity must be ignored even in a fairly complete equation. Suppose a visual experience is expressed as a function of an objective stimulus,

of nervous and cortical agitation, of psychic predispositions and of the degree of attention brought to bear upon. Is this not only a pragmatically correct equation? So much about *functional* equations. When a fact-section is simply put down as equivalent to a certain other or a group of certain others, the equation holds only by ignorance; for, strictly speaking, a fact-section never repeats itself—neither in a given configuration nor in a series. Take for example $F = F'$, the reviewing fact being regarded as equivalent to the fact reviewed.

Function of mathematics is a sufficiently philosophical definition to apply to the fact; and it *has* been very frequently applied to it in the present essay. We have to substitute 'fact-sections' for 'variable quantities' in the definition however. Function expresses an *indirect* or hypothetical relation of equivalence between one fact-section and another. Thus an effect is not directly or categorically equivalent to its cause, but is equivalent to it *provided* that Nature is uniform and the given assemblage of conditions is followed by a certain set of consequences. Compare the two equations $x = y$ and $x = \phi(y)$: the indirectness of the latter relation of equality is clear. Of the varieties of function and their applicability to the fact I must say nothing here. Only one type I shall notice, however. If

$$U = Ax^{\alpha} y^{\beta} z^{\gamma} + Bx^{\alpha'} y^{\beta'} z^{\gamma'} + \ldots\ldots\ldots$$

where $\alpha + \beta + \gamma = \alpha' + \beta' + \gamma' = \ldots\ldots = n$, then $U$ is a

homogeneous function of *n*th. degree regarding which the well-known Euler's theorem in Calculus holds. Now, what can be the pattern of this in the life of fact ? In the above homogeneity resides in the indices of the variables : the sum of the indices is constant. This surely is only one aspect of homogeneity. A stretch of fact, whether a configuration or a series, may be defined to be homogenous if the sum of the co-efficient, base and index in each segment of fact in the stretch is constant. Symbolically, if A, B, C...are the fact-sections of the stretch, then

$$\alpha A^{i}_{\beta} + \alpha' B^{i'}_{\beta'} + \ldots\ldots\ldots$$

where $\alpha + i + \beta = \alpha' + i' + \beta' = \ldots\ldots = n$, a constant, here the fact-stretch may be regarded as homogeneous. If, for example, for successive moments I have pulses of experience such that the conceived possibilities (co-efficient), the actual feeling and suggestions constituting each pulse are on the whole equal to those of the succeeding pulse and equal to a constant, then I may be supposed to have a homogeneous experience for those moments. Now, it can be philosophically demonstrated, I think, that of our ordinary stretches of experience such a description can only be roughly true : in the complete sections of a fact we can hardly expect $\alpha + i + \beta$ to be a constant for a certain period or for a certain tract of a given configuration. *Absolutely* homogeneous experience is E° or pure consciousness, for the simple reason that in it the

triangular polarity has altogether vanished : elsewhere the constants and identities appear only as results of the ignorance of discrepancies. Compare also Homogeneous Strain, Homogeneous Medium of Physics.

It has been my misfortune in this section to dismiss large and engaging problems with a few bald, categorical sentences. Briefly, Addition is the operation of P-emphasis and Subtraction of V-emphasis : in the former something *else* is presented, in the latter we abstract from a given something. Multiplication is the operation by which one given fact is *changed* into another : Compare the operator by which one vector is changed into another. As a special case, multiplication means the passage of a comparatively simple state into a comparatively complex one. Clearly, it involves M-emphasis. Division is inverse Multiplication. If $q$ is the multiplier which changes $\alpha$ into $\beta$, then $q$ is the divisor or $q^{-}$ is the multiplier which changes $\beta$ into $\alpha$. In the special case, if in multiplication we progress from simplicity to complexity, in division we progress from complexity to simplicity. Employing the inverse notation we may say that Division involves $M^{-1}$-emphasis.

Ratio is the quantitative aspect of Relation, and presupposes a unit or standard of comparison. Cf. the ratio $\frac{Q}{S}$.

Differentiation in mathematics is the operation

of finding the limit of a certain ratio, *viz* $\frac{\phi(x+h)-\phi(x)}{h}$. Integration is summation under special circumstances, *viz.*, when $n$ is indefinitely increased of a series like the following :

$$h\{f(a)+f(a+h)+f(a+2h)+\ldots\ldots+f(b-h)\}.$$

So far as the fact is a quantity these operations apply to it, and we have occasionally subjected fact-sections to the operations of the Calculus. Herbart and his disciples have indeed developed a stately Dynamics of Experience. But with respect to the crude fact, these operations can mean anything hardly more precise than what pass for Analysis and Synthesis respectively. The conceptions of these and their connexions with Differentiation and Integration, the mutual connexions of such forms of Analysis as Cartesian, Vector, Temporal, Physical, Psychical, are large and inviting topics, but I feel that it will be worse than useless here to fling at them a few bald, superficial remarks as I have been generally doing at the devoted head of Mathematics.

## 15. *Fact and Consciousness.*

The place of Consciousness in my theory of fact has been so conspicuous and so fundamental that I feel it incumbent on me to devote this last section of the present essay to a narrower inspection of its credentials. The subject being avowedly a metaphysical one should, however, belong

more properly to the next volume of the Series—'The Veil of Nature.'

I need not just now cross swords with Materialism which from ages immemorial has looked upon consciousness as a sort of 'bye-product' or 'epiphenomenon.' Two other views *viz.*, (1) A World-Principle, whether Will or Idea, essentially unconscious, swells into consciousness ; and (2) consciousness is only a function, though perhaps an inseparable function, of pulses of experience; require to be examined with some care, though as in my present essay generally my method of treatment shall be constructive rather than critical and historical. As before, our chief weapon of investigation will be self-reflection. The evidences that can possibly be culled within my present limits should be taken as suggestive : I can hardly mean them as decisive here—it will be the task of at least two future volumes to place my Reality on a stable basis. Reality for me is Consciousness.

My theory of fact has already in some fashion prepared the ground for a truer conception of Consciousness. Repeatedly, I have urged consciousness as a sort of permanent plenum or spiritual ether in which the fact lives, moves and has its being : it is the infinite sea of awareness in which the fact-sections rise, toss and disappear like waves and eddies. This of course does not make the fact something other than the plenum : consciousness together with the totality of fact-sections make the fact. These are two aspects of the fact—

the aspect of quiescent foundation and the aspect of Protean superstructure respectively : one is the inalienable, unchangeable datum, and the other is the ever-shifting construction reared upon it. I leave aside for one moment the case of pure consciousness which might perhaps strike one as an insufferably bald abstraction of the concrete fact. But how does consciousness appear to us even as an aspect of the concrete fact ? The question of course can be settled only by intuition. Give up all pragmatic interests as far as practicable for one moment and take an impartial survey of our whole concrete fact as it lives. How does consciousness appear to be connected with it ? Is this not like a boundless illumination which makes all things and their relations shine in it ? Is this not like a sort of spiritual space which makes room for and contains all things and processes ? To oriental reflection this has been generally plain enough. Placing the concrete fact courageously and unstintedly before your mind's eye, try to define the limits or bounds of consciousness in relation to what you totally have : can you assign where consciousness ends and fact continues, or for the matter of that, where consciousness ends and something *else* continues ? You may indeed *believe* that the real fact is wider than what you actually feel or know ; but does this belief really transfer you from what you actually feel or know to something beyond your experience ? The belief is a part of the experienced fact, and as such cannot establish

an existence wider than experience if we are to stick desperately to the guns of radical empiricism. I am about to launch on this delicate question, but apart from belief, does not awareness strike you as a boundless atmosphere sustaining all things in it ?

There are three questions which ought not to be allowed to get mixed up with one another. First, what is the place and function of Pure Consciousness in the scheme of existence ? Secondly, how is consciousness connected with the concrete fact that we ordinarily live ? Thirdly, what is our *belief* concerning the limits of the concrete fact and those of awareness attendant on it ? It is the second of these questions which I am tackling first by preferring an appeal straight to intuition. Laying aside all beliefs and predilections it is impossible to take consciousness otherwise than as an unbounded plenum in which all the wealth of the fact is displayed. This at any rate is the deliverance of my own self-intuition and represents, as I have incidentally observed, the net result of oriental philosophising.

Let us next try to clear the apprehension raised by the third question. Surely, we persistently believe that our experience of a fact cannot be equivalent to the fact as it is in itself : we know it only gradually and partially. What we do know lives no doubt in our experience and in our consciousness ; but we do not know all, and partly at least therefore the fact is beyond our experience and consciousness. This indeed is one of the staunchest

articles of commonsense faith, and seems to be the vital breath that sustains our life of striving and knowing. We are being perpetually haunted by a sense of imperfection, moved by a hope for something more, in all our life's ordinary possessions Even the mighty Kant could not do away with the 'Things-in-themselves' existing beyond the limits of empirical knowledge. Whether in commonsense, or in science, or in metaphysics we cannot apparently close with what we actually get : a fact is ever growing for us in a solution of endless possibilities this indeed was our justification for developing the third pole ($\alpha$) in the representation of the fact. But what does this stubborn faith of commonsense and philosophy really establish ? Does it *prove* that Fact has two aspects for us, the known and the unknown, the actual and the possible, that while the former lives in experience and consciousness the latter does not ? In other words, is Fact inseparable from consciousness (or conditions of experience), or is experience only an accident of Fact—Fact existing in experience and also beyond it ? As can be readily seen, the question is philosophically a momentous one, and let us try to face it.

In the first place, we are hopelessly shut up in our own universe of fact at any moment and can never really go beyond it. The belief that this universe is but an earnest of a universe infinitely larger and fuller may obstinately cling to us : but *where* does this belief concerning possible and

kept-back possessions lie ? Surely it is inside my universe of fact, and hence cannot prove an existence beyond what I actually possess. The whole fact for me at any moment is simply this : I have something, in conscious experience and believe that I have not all and may have something more. The actual possession *plus* the belief about possible possessions constitutes the actual fact for me : the latter element is also a part of my actual possession. If I represent my actual fact of experience by a circle, point out any element of fact which must be placed beyond this circle. Whatever I know or conceive, have or believe, accept or refuse, admit or question, is within this circle : it is my all-absorbing universe. I may believe or conceive many things about vistas of existence ranging beyond the circle : but this belief or conception together with what is believed or conceived actually is within the circle and not beyond it. In this sense my universe is self-sufficient and securely bolted from within : there is simply no without. I believe in objective fact, self-conscious individuals like myself, society, history, science, relativity and advancement of knowledge : but all these are *some* of the richness of my own universe at any moment displayed : I have somehow woven around myself a vast web of relations in which all things are suspended and represented. This need not spell solipsism, however, as must be clear from our definition of Fact : the *me* is not an inseparable feature of experience and like other features it appears

and disappears. It may be curious that while I am confined in my actual fact I dream and care about a large possible fact : if the larger fact is not really there beyond my knowledge at any moment why should I project it into unknown objectivity at all, and not live snug and complacent in my own possession? This is curious no doubt, nevertheless my universe of fact at any moment may have no *real* limits, no *real* without and no *real* windows. You can adduce nothing to drag me out of my universe. There is a wiser Bergson leading thought to-day? But the master lives in my universe at this moment and he and his system are precisely as they are actually known to me at this moment. This is a very startling proposition, it is perhaps philosophy gone mad. None the less it *is* radical empiricism if I but slightly amend the above account of Bergson as he is given in my universe. Bergson lives in my universe and is neither more nor less than what I now know him to be ; but I believe in his objectivity ; I somehow think that he and his system are really larger and deeper than as they are known in my universe now. But this belief and thought, however curious, are inside and not outside my universe of the present moment. This is a typical case and shows the relation of objectivity to my concrete universe at any moment.

But surely my experience is changing and going : with study and reflection my acquaintance with James and Bergson deepens. Now, what is

the growth of experience? Growth is the change of fact from one condition to another with this characteristic that in each condition there is a retrospective thought of past conditions and a prospective thought of future ones: this is conscious and contemplated growth. What are these past and future conditions which are thought of in a given condition of fact? Surely these show that a given condition is not sufficient by itself; that in order that this may be conceived as growing, past as well as future conditions *other* than this have to be postulated. These have to be postulated no doubt, but the belief and postulation of past and future conditions connected with the present are inside and not outside the present condition, and cannot therefore seriously undermine the self-sufficience of this. It is simply an ideal construction that I put upon the present condition: I do not know how and why. My thought and theory of Fact cannot really make it possible for it to go beyond itself: if it is empirical it can by no means cease to be empirical. But does the thought of change—not to say of growth—prove that Fact is larger than experience? I do not see how it can. While I am in a given condition I think that this is giving way to *another* condition: therefore the given condition is not all. But no; the case stands precisely as before; the thought of another condition in the midst of a present cannot make me go beyond the present.

It should be observed however that to represent

of whose dimensions I have little cause to be ashamed. It embraces all that I actually know now—my knowledge of Nature, Society, other individuals, History, and so on : You and Bergson live with *me* in my prison and are precisely as I know of you and him : curiously it involves also a belief that this universe is a poor sort of prison, a wretched abiding place, beyond which are spread infinite vistas of unknown knowledge and existence: it is therefore moved by an unrest and yearning. But the prison wall stands and defies me in spite of this belief and this yearning. Though there is thus no escape from the prison of fact, I may somehow reconcile myself to it and make the best of an inexorable necessity. Let me frankly and courageously admit the fact : it is alogical and unbounded in its concreteness : it is not a pulse at all : it is not my fact any more than it is yours or Bergson's—you, Bergson and I are merely rising and tossing waves in this shoreless sea of awareness : the belief and yearning spoken of a moment ago are also a part of the stress which mysteriously agitates the bosom of this sea. The incidence of logical constructions to this alogical fact-stuff is also a part of this stress : it is indeed thus that the dumb, mystical fact wears the aspect of an intelligible system—a world with a society of co-ordinated human beings, with history, science and advancement of knowledge. It is thus that it is conceived as a changing and growing universe, an amalgam of actual and possible, an worthy object of life's satis-

faction and seeking. Fact must not be identified with *present* experience either ; the Time-construction is also superimposed on it. And if such be the true story of the prison in which you and I and everything are shut up, is our lot so wretched as we might be tempted to think? The acceptance of the fact does not spell the dissolution of the belief in the objectivity of World and Society and of the yearning after more light and bliss. The Fact is abstract without this belief and yearning, so that the acceptance of the fact includes the acceptance of this belief and yearning. Commonsense is not materially compromised by this acceptance except in so far as we substitute for the actual objectivity of World and Society our *believed* and *conceived* objectivity. But we cannot help this. Will commonsense say what precisely it means by 'actual or real' objectivity if not the circumstance that B, for example, is believed and conceived to be external to and independent of A—that I believe that Bergson is a master who is leading philosophy not merely in my own universe of experience but in an objective world inhabited by objective thinking and feeling units like myself? But perhaps 'real' objectivity is existence independent and outside of my thought and belief. The only basis and warrant in me of such existence is, however, my thought and belief touching it. The Fact *believes* in real objectivity. And this believing in real objectivity *plus* the object so believed are sections of the fact.

Since Fact is essentially conscious experience—I thus keep clear of unconscious philosophy—and fact is all-inclusive, I can really establish nothing beyond the pale of consciousness: existence is essentially conscious experience, as Berkeley would say. Unconscious experience has been assumed to meet the exigencies of theory, but there is not a vestige of unquestionable evidence in support of it. The philosophy of the unconscious is really an offshoot of the Veil. In the boundless continuum of fact at any moment I ignore the outlying vistas of semi-attention, and fancy that a particular feature or group of features is the fact experienced by me: this is my pragmatic fact. But the pragmatic fact is not the entire conscious fact of the moment. The neglected portions of the continuum are supposed to lie in the region of the unconscious, while really they are only not *sufficiently* conscious. Let the entire concrete be accepted unreservedly and the plea for the unconscious goes. We may have degrees of consciousness in a certain sense, but unconscious and sub-conscious are categories that seem to be fictitious and part of the magic of the Veil. To go into the bases and evidences of the unconscious would be a very arduous task, and within the limits of my present essay I cannot undertake it. Unconscious Matter and Motion have at least the sanction of commonsense to redeem their strangeness: we have admitted them as sections of the concrete fact and therefore as modes of conscious experience. Unconscious Will

and Idea have neither plain commonsense nor sound philosophy to countenance them. I *believe* that a Will, essentially unconscious, objectifies itself as the brain and swells into consciousness: making consciousness thus a product of an agency and operation essentially unconscious. Now, let me ask as before, Is this belief and theory inside or outside of my conscious experience? If undoubtedly inside, it cannot be made to prove an existence or operation outside. It is only my thought of existence as such and of how my experience is related to that existence. My prison indeed cannot cease to be prison if pressing my fore-head against the prison-bars I slide into a dream of a larger and freer existence beyond. But in this sense I can have no theory of the fact—no explanation as to how it comes, lives and passes away: philosophy is thus completely undone. Quite so; the concrete fact can yield itself to no theory, deliver itself unto no system of thought. It can reflect and think about itself in any manner however: such reflection is necessarily always immanent, and cannot really establish any theory or system transcending or going beyond it. Commonsense has called such reflection Theory or System: it could not do otherwise. But in this fundamental science we gain nothing by mincing matters: our theory of Primordial Stress in consciousness or PMV is only a statement of immanent reflection: we have never offered it as a transcendental theory. Again, Will and Idea are terms that are understandable only

as vocabularies of mental science: Will may be conceived as Impulse or blind stress to get rid of its conscious nature and to make it serviceable as a transcendental theory of Being: but Will thus stripped naked is a monstrous entity. Impulse or stress of physics is an abstract idea of which the concrete original is the human Will: this latter we directly have as an actual phenomenon of our experience: the former which we have implanted in Matter is obtained by abstracting from this phenomenon—stress is Will *minus* something. We may not be prepared to go the whole length with Martineau, but neither have we any empirical warrant for regarding the life of the fact to be a condition of blind, unconscious stress. The claims of unconscious Will and Idea cannot indeed be dismissed after so slight an examination, but I shall be content here to note only how my own Theory of fact is prepared to entertain them.

We have no doubt so far as to the essentially conscious nature of the Fact. We have seen also how it is impossible to go beyond the concrete Fact as we live it, in our fatal anxiety to redeem the pledges contained within the Fact and in our equally fatal craving for a theory of the Fact such as may be satisfactory to our philosophy and commonsense. The Fact undoubtedly contains the promise of far wider vistas of existence than what may be actually given in consciousness: we desperately believe in the growth of the Fact, in the World in which our fact of experience is only

a part and consequence, in Entities co-ordinate with ourselves who live facts of experience precisely as we do ; and we also believe in a First Cause or causes beyond our ken by which our reason will fashion for itself a decent hypothesis of the creeds of commonsense and the persuasions of philosophy. But the promise and the belief, however curious and unfailing, are contained in the concrete Fact as I live it, and therefore cannot really carry me beyond it. To a man who chooses to cling complacently to the *actual*, radical empiricism can offer no really serious warrant for a *possible* and *objective* order of existence—that is to say, an order of existence outside and independent of the actual experience at any moment. Such desperate clinging to the actual will of course mean the suspension of all theory transcendental to it, good, bad or indifferent.

• But suppose, in the next place, the promise and belief contained in the Fact are allowed to consummate themselves in a theory of Reality. Why should I believe in an objective Order at all, in Entities like myself, in a First Cause and in a history of my Fact, if all these are nothing but fond delusions, idle dreams into which I am allured while pressing hard and mysteriously against my unyielding prison bars ? Is it not wiser to accept my Fact as it is conceived in this promise and belief than to take it as a prison with arbitrary walls of self-confinement ? Surely the Fact as it is lived involves this promise and belief, this objec-

tive World, co-ordinate self-conscious entities, First Cause and so forth, as unimpeachable fact-sections—quite legitimate like the actual feelings and ideas that there may be in it. If it does, why must I take it as a pure actual scrupulously ejecting the possible, thus making the concrete mutilated and abstracted ? The point thus raised will not seriously disturb the jealous limits of the Fact as we have defined it. The Fact does *not* eject the possible, the promise and belief referred to before But the thought of possible—the conception that the Fact is growing in Time, is related to a World and other self-conscious entities—is an actual section of the Fact, and therefore cannot by any means be made to prove an order of existence apart from and independent of *this* actual. Fact cannot refuse admittance to the possible : it is at home with all manner of beliefs and ideas. Only it cannot see its way to go beyond its actual limits to prove an existence independent of itself. But suppose we take the Fact at its pretensions : let my Fact be a section of a larger Fact which we believe to be the World, let my experience be only a leaf taken from the book of Social experience. Briefly, let us say ditto to the fundamental propositions of commonsense.

Now it will be possible to have a transcendental theory of the Fact. Fact, which is my concrete experience at any moment, becomes thus an effect of a Cause which is infinitely larger than the Fact. This latter is the Objective Fact to which the

lesser fact is opposed as the Subjective. The derivation of the latter from the former, the lesser from the greater, becomes *the* problem of philosophy. The greater Fact has often been identified with Matter and Motion, and with what result we all know. It has been supposed to be Spirit or Universal Soul, and with this solution of the problem we are familiar. Emphasis has shifted from the aspect of Idea to that of Will and back ; the essentially conscious nature of these two aspects has often been obscured too. In all these we have however a transcendental theory of Fact. The position of vital importance in admitting such a theory is this : Consciousness is inseparable from the concrete fact of experience – fact is essentially for us a condition of stress in consciousness ; now, in going beyond this fact to set up a theory regarding it shall we part company with consciousness also and search for the foundations of Reality admit the dark, blind forces of a partial, half-awake imagination ? Is it possible to seek for an explanation of the Conscious in the Unconscious which comes to exist under the Veil and which rushes to storm and overwhelm the actual after it is born ?

This as I have admitted is a very grave question and I shall do well not to enter into it with a light heart and scant leisure. I cannot however leave the crux of the problem wholly untouched. Matter, inorganic and organised, is born under the Veil : it is an abstract segment of

the concrete Fact which is essentially conscious experience. The abstraction invests it with a certain character : it is an unconscious something that extends in Space, resists, weighs, and so on. The brain, which is an especially interesting form of matter, is invested with certain other characteristics also. Let us grant with James that the nervous tissue is selective—mysteriously selective. Yet it appears to select without any consciousness apparently attending its activity : it is blind, unconscious selection. If this appearance be correct, selection need not necessarily be a conscious affair : the cerebral selection which is presided over by the conscious Mind is doubtless attended with consciousness, but this may be only an accident and not a necessity. We have then two species of selection : one exercised by the brain and supervised by consciousness ; the other exercised by any living nerve tissue and not apparently supervised by consciousness. Now, which shall we take as the normal kind of selection ? Selection without consciousness or with ? Is the unconscious selection of the nerve-tissue only an appearance or the conscious selection of the brain centres only an accident ? Shall we extend to the case of the brain the law of the lower centres of the spinal cord, or cover the apparent attitude of the lower centres by the law of the higher ? The Principle of continuity will cut both ways. But which is the more rational way of applying it ? Shall we not say that conscious selection is the law and normal

order and that the unconscious selection of the lower centres is only an appearance? The lower centres appear to select unconsciously, but are we quite sure that this activity is not presided over by a consciousness *ejective* to that which presides over the activity of the higher centres? How consciousness as such presides over an operation is one of the subtlest questions of metaphysics: but in selection, as we know and exercise it in experience, consciousness certainly does not appear as a mere accident. As Force and Causality are notions that we first come to understand in the experiences of our own conative life, in the exercise of our own motor nerves, and then learn to transfer to the phenomena of the objective world after abstracting from their true concrete nature, so in the case of Selection. Abstracted Force and Causality, Force and Causality divorced from Consciousness and Will, have been naturalised in the physical universe around us: we have grown accustomed to physical force and causation. But Selection has as yet been hardly naturalised in the domain of physical phenomena whether organised or not: we yet hardly suspect that Matter selects or even that protoplasm selects apart from intelligent direction. The claims of Matter to selective activity are yet hard to establish, though Philosophy is already slowly making to a recognition of such activity, *viz.*, an activity quite as mysterious as the spontaneity of the living tissue. We have already touched in a preceding section the claims

of spontaneity as inhering in Matter to which Newton's Laws of Motion apply : long will the battle be fought before these claims can be assured or rejected in Science. The temptations to think of a purely mechanical explanation of the living tissue are still very considerable, but here the evidences of the selective activity are more palpable and less eluding. However, Philosophy is not likely to be easily dislodged if she takes up a position like the following. If going beyond the concrete fact of experience we must have a transcendental theory of existence, it is but rational to portray this larger and objective Existence much in the same colours and touches as make the lesser and subjective Fact for us : if the lesser Fact is essentially spiritual, there can be hardly any justification for making the greater Fact material ; if consciousness is the very plenum in which the lesser lives, we cannot be justified in giving a short shrift to consciousness in our attempt to conceive the larger ; if force and selection are essentially phenomena of conscious Will in the lesser Fact, it will be hardly meeting the ends of speculative justice to imagine them as blind impulses—anything but conscious operations—in the larger Fact. Verily, the lesser fact is for us the standard and datum of actuality : we must know and measure and interpret the Actual in terms of what we actually have, and this latter is the lesser fact. Every act of oonception implies an incidence of the Veil over the concrete fact of intuition : this is

a proposition which the investigations of the present essay have perhaps established. As we cannot help conceiving the fact that we live in intuition, we are always buryiug our existence under the Veil. Now, the degree of veiling will render some conceptions regarding existence nearer the truth than some others. As a general rule, the greater the veil between the actual fact of intuition and the conceived nature of reality, between what we have at any moment and what we conceive the nature of reality to be, the greater the divergence of the conceptions from the truth. Let Reality be by all means made in the image of the intuitive Actual. This is anthropomorphism perhaps, but we cannot help it. Hence Materialism we have discarded as a correct theory of transcendental reality, and the view that a Quiescent Real, essentially spiritual, is gradually and partially reproducing itself in our experience—the view of Berkeley and Green—we have admitted as making a very near approach to truth. It is no part of my business here to examine the claims of Modern Pluralism as a still nearer approach to truth, but the principle of the fundamental basis of Reality in ourselves and that of relative veiling in regard to this basis—the fact of intuition—are, I conceive, of supreme importance in the code of metaphysical justice.

I am perhaps dealing in a very cursory way with the great problem as to how consciousness is related to existence. One of the crucial points

involved in the problem I have touched, however If consciousness appears to be essential to the basis of Reality in me, the fact of experience, it cannot be, in accordance with the principle just laid down, made inessential to the Reality outside of me: this cannot be conceived as blind, unconscious or even sub-conscious Substance or Force The sheer impossibility of conceiving any mode of substance or operation apart from conscious activity is also another crucial point involved in this problem. The intuition of force or operation is essentially a conscious experience: the conception of these also is impossible without implying spiritual activity. Conceive Matter and Motion for example, and see how these so-called independent entities vanish into thin air when the sustaining breath of spiritual activity is withdrawn. What does an extended, resisting and heavy substance mean really? Is not every one of these 'primary' qualities a spiritual phenomenon? Is not the same essentially true of the movement of a body in Space? Can we be justified in playing fast and loose with this spiritual activity then which endows Matter and Motion with their very essence, and which being withdrawn leaves them empty terms with no meanings whatever? I cannot dilate, but I appeal to reflection.

We do not require indeed unconscious mind-dust to serve the ends of consistent philosophy We need not conceive a mind-molecule attached to a moleclue of matter, and each infinitesimal

nerve-shock inducing an infinitesimal iota of feeling. But we do require a universal spiritual stuff—not certainly made up of spiritual atoms—in which all experiences, yours as well as mine, appear and disappear: a co-essential spiritual stuff which holds you, me, the world and everything, to which nothing is foreign. No consistent philosophy of the World and our own place and destiny in it can be reared up without such a foundation. James' pulses of experience cannot do any more than Clifford's mind-stuff which the former so ably demolishes can. The spiritual stuff, it must be plainly seen, is essentially conscious existence. The philosophy of the unconscious has also laid its basis in the apparently unconscious conditions of our own existence. But it need hardly be pointed out that these unconscious conditions in us—such as in profound sleep, in perfect anæsthesia, and so forth—are only apparently so. In the first place, it is always possible to explain such cases as instances of lapses of memory, of dreams forgotten. But even assuming that in these instances we do not dream and feel anything, no case is made out for the discontinuity or break of consciousness as such. In the West, consciousness has been too hastily identified with directed or informed consciousness, so that where no direction or form is discernible Western thinkers have been apt to imagine that consciousness as such has also ceased. To their pragmatic eye, consciousness is always particular, having a particular direction and form.

Hence if in profound sleep we concede that we dream no dreams and in perfect anæsthesia we grant that we feel nothing, we really concede that consciousness may some times cease to exist in us. But the extinction of consciousness as such is utterly inconceivable in any case. I have myself suggested consciousness as a permanent plenum which sustains and vitalizes everything : to me this is an unmistakeable deliverance of direct intuition. Ordinarily, we never meet with a condition of consciousness which is absolutely without a direction and a form : but this is no reason why we should have no consciousness at all where this direction and form are supposed to have gone : that will be seeking to prove too much by the accidents of our normal life.

Consciousness has been often carelessly identified with Intelligence or Understanding. But we have defined consciousness as the state of awareness or feeling, so that granting that sensibility is attached to such minute specks of protoplasm as the amœba we may pertinently say that the amœba is conscious. Any substance that feels, however chaotically, is conscious. It need not be intelligent or logical to be conscious. Even our own concrete fact is alogical, but it is certainly conscious. Intelligence is only a special manifestation of conscious existence, a specialised organ developed out of the primordial stuff of life. The limits of conceptual and thinking existence are not the limits of consciousness therefore. Common-

sense is prepared to concede to the amœba feelings of a most rudimentary kind ; the philosophy of Evolution has confirmed and not weakened this simple faith of the human mind. But what about the corpuscles of dead matter ? That there is an absolute line of cleavage between matter and organic being is a position that is being challenged by the enlightened culture of to-day as it was challenged by the ancient wisdom of the world. Are we quite sure that the material particle is not a living corpuscle with a low curve of response, so low indeed that till now it has escaped the vigilance and ingenuity of exact science ? But the barriers which seemingly divide the wide realms of Nature are proverbially uncertain and shifting. Science cannot hope long to keep matter and organic being wide apart and miss the fundamental affinities between them. Sensibility, Life and Matter are after all only pragmatic and approximate divisions of Nature, convenient perhaps but not answering the true ends of sound philosophy. The differences are probably differences of degree and not of kind. So that even the material particle lives and feels. It is not the height of dogmatism to maintain this. Nothing could be more apparent than this if we were not blinded by the unreasoning faith of common practical life. In life we commonly ignore what is not relevant to our special purpose in view. The Veil works wonders, deals out existence in queer and fantastic forms, and the simple savage and the child who regards all existence

as akin to his own being—living and feeling like himself—has more truly felt the pulse of being than the civilised man of culture. If fact is the basis and prototype of existence, do we not find it permeated with life and consciousness? And if so, should we not take existence also as permeated with life and consciousness? If life and consciousness are of the very essence of the Fact, they must be of the very essence of Existence also—Fact and Existence being related to each other as they are. If existence has been generally robbed of life and consciousness, the circumstance must be attributed to the Veil. In practical life and in philosophy which is oppressed by the nightmare of practical living, we do not care for life and consciousness as such but only for certain forms and tones of life and consciousness. Where we miss these forms and tones we fancy that we miss life and consciousness also. Certainly out of infinite possible modes and tones in which life and consciousness may exist we suspect and recognise only some and ignore all the rest. A crystal is dead to us, because it possesses a kind and degree of life which we do not care to know. A germ is unconscious to us, because it possesses a kind and degree of consciousness which we do not care to apprehend. To be or not to be are after all pragmatic ends, being and non-being may change places. What does not exist for commonplace life may exist for science: but even science is swayed by pragmatic ends, can seldom break completely

loose from the idols of commonplace life. Hence the essential basis of existence—consciousness—has been commonly looked upon as a very much specialised and peculiar manifestation in Nature. A full and unreserved acceptance of the fact, such as it has been the earnest endeavour of this essay to establish and classify, would effectively dispel the self-delusion of our so-called commonsense. In a sense the savage and the child are far less removed from the concrete fact than we are : the processes of civilisation and manhood are essentially processes of abstraction. To live the concrete again Man must in a sense go back to the state of Nature.

As I have conceived the fact to be a structure laid upon consciousness as such, so I conceive concrete existence to be a structure laid upon being as such : and also, I identify consciousness as such with being as such. To my reflection, the essence of being is in consciousness. Take for example the cloud which I now see. It is a section of my experience projected and objectified—a circumstance which does not take me out of my experience. In fact, the concrete experience of the moment includes all, Space, objectivity and everything, and if this concrete is essentially conscious existence, can the cloud really cease to be so also ? An object is merely a bundle of sensations actual and possible—is a proposition that has been often made since the time of Berkeley and Hume. In spite of the boldness with which this statement has

been made, commonsense has been loathe to part with its belief in a mysterious substratum or objective nexus underneath this bundle of sensations. Mill's permanent possibility is vagueness incarnate : either it means the mysterious substratum or it means nothing. The Buddhist's reduction of the thing is similar and perhaps more thorough-going ; but sensations aggregating with sensations and following upon one another as a series leave the confusion of thought about existence worse confounded. In the first place, the sensations and even the pulses of James are abstract fact-sections and not the fact ; the Thing which is an aspect of the fact is an aspect of conscious experience which is a continuous mass, so that Thing cannot but be of the essence of this continuous mass ; the same substratum which supports this continuous mass of experience supports and underlies the Thing. This substratum is boundless, changeless and alogical, but *not* mysterious or unknowable. It is the structure upon this Basis that contains all the mystery : it is the nature of the Stress PMV on the bosom of this shoreless sea of spiritual being or awareness that is really inscrutable. The Basis is the unfailing Light itself : the structure is the wonderous Veil. I hope to devote two future volumes to a study, so far as a study is possible, of this Veil and this Light respectively. In advancing consciousness as the Basis of Reality, whether subjective or objective, I do not seriously rely upon the worn-out arguments of the schools, but, in conso-

nance with the practice of the present essay, upon the deliverances of unbiased reflection. All concrete existence, which in its entireness is the fact, appears to me as a crust laid upon spiritual being as such—not the shy, mysterious entity of sneaking dogma, but the Light of the very pupil of our eyes, the fundamental state of our knowing, feeling and willing experience.

I am coming to the nature of this Basis presently, but in the meanwhile I note that, in the second place, the reduction of the Thing to a mere bundle of sensations actual and possible with nothing left over appears to me defective psychology in another respect. I am asked to think away all actual and possible sensations which apparently make the cloud and then to conceive what remains over. This request itself is uncritical and unscientific. As I am looking at the cloud I have, or rather I am, a continuous mass of experience which is intuitively differentiated into a variety of features and tones. The cloud is not for me merely a synthesis of these features and tones. What I can think away is not the continuum of experience as such (this can never be put equal to zero), but the features and tones appearing in it. It is like the thinking away of the waves and froth from the heart of a boundless sea : does the sea itself vanish by such abstraction ? As we are left with a placid, quiescent sea in this analogy, so we are left with placid, quiescent, homogeneous continuum of experience in the case under discussion.

By thinking away the features I am merely left with a vague, undifferentiated consciousness of existence. As in cultivating perceptual acquaintance with an external object I often begin with a vague cotinuum and have features and tones gradually emerging out of it, as in short the objective picture grows from almost indistinguishable vagueness to a progressively articulated definiteness, so in eliminating or otherwise losing the object in consciousness I have to go through a reverse process, *viz.*, from variety and definiteness to homogeneity and vagueness. It is as if adult human experience is relapsing back to amœboid sensibility. The consummation of the process does not therefore really bring me to absolute nothing but to an undefinable something.

As in the appearance of an object so in its disappearance *three* broad landmarks can be fairly well indicated. I always carry with me a consciousness of infinite existence. Even while I am not engaged with special forms or relations of existing things I am an experience of infinite being. A moment's unbiased reflection will, I am sure, bring me out. When a particular object has not appeared, this placid, unsuspected yet unmistakeable consciousness of being is lying silently in wait. It is the primordial stuff of creation, shapeless and all-pervasive, waiting for the forms that the hand of God may impress upon it. *This* can never be dispensed with, either in thought or in feeling, for, it is the essence, the substratum of thought and

feeling themselves. Let me call this the Ultimate Basis of the fact. In the next place, when an object is just beginning to appear in consciousness, it commonly begins as a chaotic mist, an almost indifferential *fact-plasm* as it were, and gradually proceeds to assume a form and a name. It is like the starting of an embryo as a structureless mass of protoplasm and then proceeding to assume such differentiations of structure as the hypoblast, the mesoblast and the epiblast. The precipitancy with which objects appear in consciousness leaves the first stages of its appearance very much obscured and their character almost wholly unsuspected : the pragmatic interest also lies in the fuller possession and not generally in the earlier earnest and promise. The chaotic mist is not however a *wholly* undifferentiated and undiscriminated condition of existence In it the promise and potency of the fact yet unborn are given already ; it is also somehow discriminated from the rest of the continuum : it is felt as a certain local stress in the placid experience of being in which we perpetually live : it is already a centre of a mysterious stir and anxiety of birth. Let me call this the Secondary Basis of the fact. After this and seeming to merge out of it we have of course a fairly articulated picture growing apace. This is the third stage. Now, I wish to emphasise the fact that a full-fledged object in disappearing, whether in thought or in feeling, has to pass through a process commonly the reverse of the above. Dis-

appearance is appearance inverted. Hence in thinking away the sensible qualities of the cloud before me I am merely reducing variety into homogeneity and am certainly left with either the secondary basis or the primary at the end of the experiment.

Very briefly and hastily I am seeking to establish the indispensable connexion between Consciousness and Existence. The most substantial plank in my argument is, I venture to hope, my theory of Fact itself. Before I close this essay I should discharge a small part of the heavy burden of obligation which rests on me, *viz.*, a discussion of the nature and claims of consciousness as such. Throughout the present essay I have not only frequently referred to it but freely pressed it into such service as it can render. The claims of this order of existence, which I have just now spoken of as the ultimate or primary basis of fact, appear to rest not so much on dialectic grounds as on intuitive and experimental grounds. These grounds I must now briefly mention. Experiment in this connexion I define to be a special kind of intuition : for example, to think away the sensible qualities of an object before us is an experiment. Intuition also is a term that calls for some light and definition. Of intuition we must distinguish two kinds. As a fact lives in consciousness, the circumstance we may call intuition : for example, my concrete universe is given to me in intuition. Such intuition is dumb and alogical : it is a cons-

ciousness of existence over which a mysterious crust of features has been laid, as it were. All the categories of thought are wide of it. Repeatedly we have referred to the nature of this kind of intuition. The other kind of intuition may be roughly identified with what is known in mental science as introspection or reflection. It is an attempt to make an object of a fact, or rather, of a section of fact : the fact or the sectional fact becomes an object of regard. Experiment is a more special kind of intuition. Here the pragmatic interest of the subject is more apparent. Reflection is the observation of a fact as it is without consciously disturbing the circumstances of its occurrence, existence and change ; Experiment is the observation of a fact in a condition or under circumstances in which it is our interest to take note of it. Now I proceed to indicate the grounds of pure consciousness, $E^0$ or $U_0$.

Though alogical intuition will not tell its own story, we can make reflection *on* intuition render us some sort of account ; if we cannot stare at the sun itself, we can at least bring the sun sufficiently within our ken as it is being reflected on the glassy, placid surface of a lake. Such an effort we have previously called the *reviewing* of a fact. Now, how does the intuitive fact appear in review ? Is it not an unbounded consciousness of existence over which the mysterious crust more than once alluded to before is laid ? Does consciousness appear either as restricted or merely as an atten-

dant circumstance, an accident, a function ? Does it not appear as the very basis, the very sustaining breath, of the fact itself ? Suppose we grant that consciousness does appear as the very basis of fact and not merely as an attendant circumstance ; but surely this does not render the case for *pure* consciousness absolutely proven. How can we be sure that the Basis is not an abstraction apart from the structure, the crust, laid upon it ? If by abstraction we mean an aspect isolated in thought from the concrete whole in which it is given, then I can have no hesitation to concede that the inalienable and unrestricted basis of fact is an abstraction in relation to the concrete whole as we ordinarily live it. The basis though given in the concrete whole cannot be equated to it, and hence it is an abstraction in relation to it. But this circumstance does not render the basis an abstraction for all time and in all conditions even for a normal human being. Concrete wholes change their characters from time to time, so what is an abstraction in relation to a particular concrete whole at any time may become a concrete whole itself at any other time. By the bye, are not our pragmatic facts, those with which our commonsense and culture play, abstractions themselves ?

The question of real importance is this : Have we ever a case in which the basis of the ordinary fact becomes the fact itself ? Briefly, have we ever a bare, homogeneous consciousness with no determinations whatever ? If we have, the plea of abs-

traction goes : the Basis becomes the concrete Fact itself. To begin with it must be frankly admitted that the Basis becoming the concrete Fact is not at all an ordinary case, and hence it is one which is exceedingly hard to establish either by reflection or by experiment. The bare consciousness of *this* or *that*, the experiences of just going to sleep and just waking, and even the consciousness *of* being as such, are more or less close approximations to the state of consciousness as such, but none can be identified with it. To take the last and perhaps the closest of the approximations—the consciousness of being as such. In this two aspects have been separately presented, *viz.*, consciousness and being, which are absolutely one in pure consciousness : this latter is not a consciousness *of* being but being-consciousness where there is no duality of aspect at all : language cannot reveal this curious confusion of being and consciousness, for in the very attempt it must polarise the substance into being *and* consciousness ; but reflection ought to enlighten us. Similarly, if quiescence and bliss be of the nature of consciousness, we cannot properly say that pure consciousness is a consciousness *of* quiescence and bliss. If Bliss and Being are really bound up with the essence of consciousness, we should rather say that the concrete substance is Being-Bliss-Consciousness or *Sacchidánanda* as the Vedas would say. Even this is dressing up the alogical, unspeakable fact in the garb of thought and language.

Now, what evidence have we of the fact that the pure consciousness is ever for us or can be ever for us an actual state of existence ? In normal life as well as in abnormal pathological states we have occasionally stretches of experience in which simplicity of features or determinations has advanced perilously near to barreness and homogeneity, in which experience has become *almost* structureless or featureless without being evanescent ; but do we ever actually come to the limit of featurelessness or homogeneity ? Ordinarily do not of course. There are, however, *two*, only two, *experimental* methods by which this consummation may be realized in us ; and if it is thus realized we should be precluded from regarding pure consciousness as a mere abstraction in all cases. I begin by distinguishing the two methods as the Method of Conceptual Limits and the Method of Actual Limits.

I. In the previous investigations we have already very freely and frequently employed the former method. The latter method is however more important and conclusive, but to a systematic study of this method with its accessories, stages and results I hope to devote a future volume of the Series. The first method may be divided into two kinds according to the different directions in which the limit may be taken, *viz.* the direction of evanescence (zero) and that of excrescence (infinite variety ) : the one limit will take us to homogeneous experience—not evanescent experience, which is impossible—, to pure consciousness in which all

features have disappeared ; the other limit will take us to an experience of infinite richness and variety—to the Quiescent Real in short. With this latter limit we have scarcely anything to do here. But what does the Limit of Evanescence mean really, and can we expect it to bring us to homogeneous experience ? With a view to finding an answer to this we have to try an experiment ourselves—as we have occasionally tried it in various connexions before now—in the direction of evanescence. Let us take a concrete fact, and let us gradually think all determinations away from it : the sensible qualities, the associated ideas, the polarity of Subject and Object—in fact all that make the experience a particular experience—are made to vanish. Now, what is the limiting value of this operation ? Absolute void ? I think not. In the limit, we should be left with consciousness as such, or what is the same thing, with being as such. In pursuing this method we can, however, hardly expect to come to the limit itself : the most scrupulous effort can perhaps bring us to a condition of minimum determination, and not to a condition of *no* determination. But as in mathematical and physical limits so in this we have to imagine or conceive a condition of no determination as a consummation of a condition of vanishing determinations : in this method we can imagine or conceive the limiting condition, but not actually realize it.

Here I have simply stated the method and

what I believe to be the Limiting Condition without considering the thousand and one difficulties with which the way of this method is beset. Two of the more formidable difficulties I shall do well to mention here : it shall be the look out of a future essay to see if these difficulties can be faced and overcome. *First,* Is the operation of vanishing determinations which is expected to bring us to the Limiting Condition continuous ? We can go on thinking away determinations from a concrete object of experience to a certain extent no doubt, but can we proceed in the same direction indefinitely ? We may have possibly discontinuous operations in mental life : for example, Weber's Law which establishes a quantitative connexion between Stimulus and Sensation is true to a certain extent ; beyond that the Stimulus may increase and act upon the organism but the direction of the resulting sensation may not be the same as before—if it were systematically increasing before it is now either stationary or even decreasing. Beyond this limit therefore Sensation is a discontinuous function of Stimulus. May not the same thing be true of the operation that are so far imagining to ourselves ? May not this operation (1) cease itself after it has proceeded a certain way ahead, and (2) produce a resulting experience which forsakes the direction of the operation beyond a certain point as Sensation does in relation to Stimulus ? In either case, the Limiting Condition fails. *Secondly,* assuming that the operation is

continuous, both in itself and in relation to its function, what guarantee have we that the Limiting Condition will be one of *no* determinations and not merely one of minimum determinations as in mathematics. Limiting Value means a value from which the value of a function can be made to differ by a quantity less than any assigned value however small. The mathematical limit involves therefore a distinct conception of infinitesimal difference. Shall we admit this conception in our own case too ? Shall we say that pure consciousness is only the *theoretical* limit from which a given *actual* experience can be made to differ by an infinitesimal difference ? If so, pure consciousness remains an abstraction, an ideal, still. These difficulties cannot be lightly met and easily overcome. Briefly, however, I will say this : In an actual trial of the experiment referred to there appear no suspicious signs of a possible discontinuity either of the operation or its result. Also, infinitesimal difference in mental life is no difference, if it means a difference that we cannot feel : if we at all feel the difference between two conditions A and B—no matter how and to what extent—the conditions *are* different ; if we do not—not even as regards Time and Space relations—then A is absolutely identical with B : now, what dces infinitely small difference between A and B mean ? These are only hints to reflection.

II. The Method of Actual Limits is a mystic method by which the mystic swoon of Vedanta

and Neo-Platonism may be *actually* realized by an experimenter. In this we do not simply conceive a condition when the limit of a certain operation has been taken : we actually *live* this condition. And if we live it—and that beyond the shadow of a doubt—it becomes a concrete state itself, not merely the inalienable Basis of Fact as reason and reflection expose it to be, but Fact itself. Here I can do no more than passingly refer to this Method and its Result : the evidences are too varied and exacting to be fairly compressed and considered in a closing paragraph of an essay. Shall I merely refer to the cerebral difficulty which is supposed to be fatal to this audacious claim of the mystic ? Psychosis being admittedly parallel to neurosis, how can a quiescent condition of pure consciousness pull on with an unstable—ever acting and never resting—cerebral counterpart ? Why should it not ? I shall ask in reply. Has science ever proved that an unstable brain-state must correspond with an unstable mental state ? When I am deeply merged in an objective vision the experience is fairly a stable one, though not absolutely ; what about the cerebral state which corresponds to it ? This latter also may be *relatively* stable : but have we really established a law that the degree of quiescence of a mental state varies directly as that of the total cerebral state ? Suppose we grant this : we have ourselves previously suggested that in the life of the brain as in the life of the mind there may be comparatively quiescent

conditions either periodically recurring or artificially induced. But even then the mental state need not correspond to the motions of the *individual* molecules, centres or fibres of the brain ; it corresponds perhaps to the total or *resultant* state of the brain. Now, the respective components of two resultant conditions may vary among themselves without necessarily making the resultants vary also. Thus the components $p$, $q$, $r$ of the resultant A and the components $x$, $y$, $z$ of the resultant B may change respectively into $p'$, $q'$, $r'$ and $x'$, $y'$, $z'$ without making A and B take different values. Hence, if during two consecutive moments the resultant brain-state continue to remain unchanged, though the component motions of the molecules, centres etc., may have changed, the corresponding mental state will also remain unchanged. Thus a stable mental condition may have its counterpart in a stable, unchanging *resultant* cerebral condition. 'Stable' as applied to the brain need not necessarily mean a condition of *no* motion ; it means perhaps the condition of uniform or unvarying motion in so far as the brain *as a whole* is taken into account. This state of motion is still a condition of stress ; the question therefore still remains : Can an experience which is supposed to be a condition of no stress correspond to a resultant brain-state which is undoubtedly a condition of stress ? Spinozistic Parallelism may really carry matters to such a head as this. But here we need not stay for a discussion. This Method will engage us more fully in a later volume.

About the nature of the Primary Basis I have to offer but few categorical remarks in this closing paragraph. *First*, none of our categories of thought such as unity, plurality, infinity, may touch this ultimate Basis. It is this that imparts to the concrete fact its essentially alogical and unspeakable nature: as the Fact is so the facts are. Nevertheless, the Fact, the Basis is not unknowable—it is consciousness as such. *Secondly*, it is conceivable or realizable in us not by means of dialectics but by means of an experiment in the line of either of the two methods explained above. Ordinary intuition supplemented by dialectics will still reduce pure consciousness to an abstraction. *Thirdly*, Consciouness and Being are the two aspects of this Basis—if we may say so about an existence which is absolutely simple. In ordinary experience Being and Consciousness, though essentially bound up together, still diverge from each other: we inveterately believe in objective existence which is beyond the pale, and independent, of consciousness: there is the co-efficient of possibilities attached to the actual. But in the Basis the divergence is absolutely gone. *Lastly*, the Basis is the home of quiescence and also, as we shall see in a future volume, the essential substratum of enjoyment and bliss. It is the level of no stress, zero potential, absolute homogeneity, all consciousness, all being and all bliss.

# ERRATA

| *Page* | *Line* | | *For* | | *Read* |
|---|---|---|---|---|---|
| 4 | 18 | | *d, d′* | | d, d′ |
| 22 | 16 | *after* | do | | I |
| 44 | 7 | | quescence | | quiescence |
| 81 | 11 | | It is | | Is it |
| 88 | 22 | | $\overline{e_x \quad e_o}$ | | $\overline{e_X \quad e_o}$ |
| 97 | 14 | | retcongnises | | recognises |
| 97 | 23 | | picturc | | picture |
| 110 | 17 | *after* | respectively | | be |
| 115 | 27 | | fuction | | function |
| 124 | 13 | | actnal | | actual |
| 125 | 23 | | one | | once |
| 128 | 21 | *after* | begins | | with |
| 129 | 25 | *after* | Fact-section | *omit* | F′ |
| 135 | 21 | „ | experience | „ | , |
| 148 | 28 | „ | $I_1^f$ | | . |
| 153 | 23 | | indentical | | identical |
| 183 | 2 | *after* | and | | is |
| 184 | 4 | | o | | to |
| 189 | 18 | | tbought | | thought |
| 190 | 25 | | object | | Object |
| 192 | 18 | | a | | of |
| 195 | 14 | | fact-staff | | fact-stuff |
| 207 | 22 | *after* | old | | object |
| 208 | 4 | „ | life | | of |
| 225 | 18 | „ | given | | , is not |
| 229 | 14 | „ | nature | | |

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| 237 | 13 | | ; | |
| 252 | 2 | *after* | all | |
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| 259 | 20 | | sidesh as | sides has |
| „ | 24 | | successiveiy | successively |
| 269 | 12 | | finite | infinite |
| 271 | 27 | | changing | Changing |
| 274 | 20 | | strech | stretch |
| 280 | 4 | *after* | is | not |
| 285 | 31 | „ | object | |
| 288 | 25 | | ; | |
| 296 | 24 | | offort | effort |
| 297 | 12 | | ont | out |
| 332 | 7 | | *temporarily* | *temporally* |
| 358 | 22 | | we are | I am |